WORK ORDER#1312548

SDG NO.	#1312548
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-like)	Cheryle Lu
COMPLETION DATE	02/04/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB/MB, ICB/CCB)	X (except for selenium)	X (CCB contained 1.6 µg/L of selenium).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X (the absolute difference value between the original and the duplicate sample for zinc <RL, no qualification was required.)	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (except for cyanide)	X (MS %R of cyanide was <QC limit.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
12/11/2013	Apache-WD-105	#1312548-01	Water	X	X	X	X
12/16/2013	Apache-HI-573	#1312548-02	Water	X	X	X	X
12/17/2013	Helis Oil & Gas-Galveston-355	#1312548-03	Water	X	X	X	X

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 218.6 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Apache-WD-105	selenium	"U" at RL.	CCB selenium >MDL, but <RL; Sample result >MDL, but <RL.
Apache-WD-105 Apache-HI-573 and Helis Oil & Gas Galveston-355	cyanide	"J" for (+); "UJ" for ND.	MS %R of cyanide was <QC limit.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
RL – Reporting Limit %R – percent recovery MB – Method Blank
MS/MSD – Matrix Spike (MS) /MS duplicate
ICB – initial calibration blank CCB – continuing calibration blank
MDL– method detection limit RL – Reporting limit

WORK ORDER#1312932

SDG NO.	#1312932
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-like)	Cheryle Lu
COMPLETION DATE	01/31/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB/MB, ICB/CCB)	X (except for selenium)	CCB contained selenium (0.73 µg/L).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for selenium and zinc)	X (MS/MSD %Rs of selenium and zinc were outside the QC limits).
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
12/19/2013	WT-EW-910	#1312932-01	Water	X	X	X	X

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 218.6 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
WT-EW-910	selenium	No qualification was required.	CCB selenium >MDL but <RL; Sample result "U".
WT-EW-910	Selenium	None for "U".	%R of MS was >QC limit, but the %R of MSD =QC limit.
WT-EW-910	Zinc	None	Sample result was greater than 4 times of the spiked amount, and the %Rs of MS/MSD were outside the QC limits.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
RL – Reporting Limit %R – percent recovery MB – Method Blank
MS/MSD – Matrix Spike (MS) /MS duplicate
ICB – initial calibration blank CCB – continuing calibration blank
MDL– method detection limit RL – Reporting limit

WORK ORDER#1401280

SDG NO.	#1401280
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-like)	Cheryle Lu
COMPLETION DATE	02/03/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB/MB, ICB/CCB)	X (except for mercury and selenium)	X (PB contained 0.044 µg/L of mercury, ICB contained 0.05 µg/L of mercury, and CCB contained g/L of mercury; CCB contained 0.57 µg /L of selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	X (cyanide %R MS<QC limit.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
01/06/2014	Ankor Energy-PL-13	#1401280-01	Water	X	X	X	X
01/07/2014	Ankor Energy-SS-229	#1401280-02	Water	X	X	X	X
01/07/2014	Ankor Energy-MC-21	#1401280-03	Water	X	X	X	X
01/08/2014	Ankor Energy-ST-156	#1401280-04	Water	X	X	NA	X

NA – not analyzed
(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 218.6 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Ankor Energy-PL-13, Ankor Energy-SS-229, and Ankor Energy-ST-156.	Mercury	"U" at "RL".	PB, ICB and CCB contained Mercury >MDL but <RL; Sample results >MDL but <RL.
Ankor Energy-PL-13 and Ankor Energy-ST-156.	Selenium	"U" at "RL".	CCB contained selenium >MDL but <RL; Sample results >MDL but <RL.
Ankor Energy-ST-156.	Cyanide	UJ for ND	%R MS<QC limit

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
RL – Reporting Limit %R – percent recovery MB – Method Blank
MS/MSD – Matrix Spike (MS) /MS duplicate PB – Prep. Blank
ICB – initial calibration blank CCB – continuing calibration blank
MDL– method detection limit RL – Reporting limit

WORK ORDER#1401539

SDG NO.	#1401539
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	02/10/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for mercury)	X (MB/PB contained 0.045 µg/L of mercury, ICB contained 0.045 µg/L of mercury, and CCB contained 0.041 µg/L of mercury).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (except for hexavalent chromium)	X (%Rs of Hexavalent chromium 10%)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
01/13/2014	Fieldwood (Apache)-MP-298	1401539-01	Water	X	X	X	X
01/13/2014	Fieldwood (Apache)-MP-298-Unfiltered	1401539-02	Water	X	X	X	X
01/14/2014	Fieldwood (Apache)-SP-62	1401539-03	Water	X	X	X	X
01/14/2014	Fieldwood (Apache)-SP-62-Unfiltered	1401539-04	Water	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 218.6 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Fieldwood (Apache)-MP-298, Fieldwood (Apache)-MP-298-unfiltered, Fieldwood (Apache)-SP-62, and Fieldwood (Apache)-SP-62-unfiltered.	Hexavalent chromium	"UJ" for ND.	%Rs of hexavalent chromium (10%) in MS/MSD <30%.
Fieldwood (Apache)-MP-298, and Fieldwood (Apache)-MP-298-unfiltered.	Mercury	"U" at RL	MB/PB, ICB and CCB contained mercury >MDL, but <RL; Sample result>MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated ND – nondetect
QC – quality control < – less than > – greater than MB – Method Blank
RL – Reporting Limit MDL– Method Detection Limit %R – percent recovery
%Rs – percent recoveries MS – Matrix Spike MSD – Matrix Spike Duplicate
ICB – initial calibration blank CCB – continuing calibration blank R– rejected

WORK ORDER#14011066

SDG NO.	#14011066
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	02/24/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for lead)	X (CCB contained 0.65 µg/L of lead.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Unrelated sample was used for metals and cyanide.)	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
01/27/2014	Fieldwood (Apache)-SP-75	14011066-01	Water	X	X	X	X
01/27/2014	Fieldwood (Apache)-SP-75-Unfiltered	14011066-02	Water	X	X	X	X
01/27/2014	Fieldwood (Apache)-SP-65	14011066-03	Water	X	X	X	X
01/27/2014	Fieldwood (Apache)-SP-65-Unfiltered	14011066-04	Water	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 218.6 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Fieldwood (Apache)-SP-75; Fieldwood (Apache)-SP-75-Unfiltered; Fieldwood (Apache)-SP-65; and, Fieldwood (Apache)-SP-65-Unfiltered	lead	None	CCB contained 0.65 µg/L of lead >MDL, but <RL; Sample results were NDs.

NOTE:
U – nondetect (+) – positive result J – estimated ND – nondetect
QC – quality control < – less than > – greater than MB – Method Blank
RL – Reporting Limit MDL– Method Detection Limit %R – percent recovery
%Rs – percent recoveries MS – Matrix Spike MSD – Matrix Spike Duplicate
ICB – initial calibration blank CCB – continuing calibration blank R– rejected

WORK ORDER#1402267

SDG NO.	#1402267
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	03/10/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X (unrelated sample was used.)	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
2/5/2014	Fieldwood (Apache)-SP-70	1402267-01	Water	X	X	X	X
2/5/2014	Fieldwood (Apache)-SP-70 Unfiltered	1402267-02	Water	X	X	X	X
2/5/2014	Fieldwood(Apache)-MP-153	1402267-03	Water	X	X	X	X
2/5/2014	Fieldwood(Apache)-MP-153 Unfiltered	1402267-04	Water	X	X	X	X
2/5/2014	Fieldwood(Apache)-SP-87	1402267-05	Water	X	X	X	X
2/5/2014	Fieldwood(Apache)-SP-87 Unfiltered	1402267-06	Water	X	X	X	X
2/5/2014	Fieldwood(Apache)-MP-259	1402267-07	Water	X	X	X	X
2/5/2014	Fieldwood(Apache)-MP-259 Unfiltered	1402267-08	Water	X	X	X	X
2/8/2014	Fieldwood (Apache)-GI-43	1402267-09	Water	X	X	X	X
2/8/2014	Fieldwood (Apache)-GI-43 Unfiltered	1402267-10	Water	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 218.6 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

WORK ORDER#1402748

SDG NO.	#1402748
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	04/01/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** [1]
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
02/17/2014	Fieldwood (Apache)-WD-122	1402748-01	Water	X	X	X	X
02/17/2014	Fieldwood (Apache)-WD-122-Unfiltered	1402748-02	Water	X	X	X	X
02/17/2014	Fieldwood (Apache)-GI-47	1402748-03	Water	X	X	X	X
02/17/2014	Fieldwood (Apache)-GI-47-Unfiltered	1402748-04	Water	X	X	X	X
02/17/2014	Fieldwood (Apache)-GI-73	1402748-05	Water	X	X	X	X
02/17/2014	Fieldwood (Apache)-GI-73-Unfiltered	1402748-06	Water	X	X	X	X
02/18/2014	Fieldwood(Apache)-PL-10	1402748-07	Water	X	X	X	X
02/18/2014	Fieldwood(Apache)-PL-10-Unfiltered	1402748-08	Water	X	X	X	X
02/18/2014	Fieldwood(Apache)-PL-11	1402748-09	Water	X	X	X	X
02/18/2014	Fieldwood(Apache)-PL-11-Unfiltered	1402748-10	Water	X	X	X	X
02/18/2014	Fieldwood(Apache)-GI-90	1402748-11	Water	X	X	X	X
02/18/2014	Fieldwood(Apache)-GI-90-Unfiltered	1402748-12	Water	X	X	X	X
02/18/2014	Fieldwood(Apache)-GI-93	1402748-13	Water	X	X	X	X
02/18/2014	Fieldwood(Apache)-GI-93-Unfiltered	1402748-14	Water	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – dissolved mercury
(3) Method SW 218.6 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

WORK ORDER#14030032

SDG NO.	#14030032
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	04/11/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for CCB)	X CCB contained lead.
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Except for the hexavalent chromium)	X %Rs of hexavalent chromium were "0".
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
2/26/2014	Fieldwood (Apache)-WC-65	14030032-01	Water	X	X	X	X
2/26/2014	Fieldwood (Apache)-WC-65 - Unfiltered	14030032-02	Water	X	X	X	X
2/26/2014	Fieldwood (Apache)-WC-66	14030032-03	Water	X	X	X	X
2/26/2014	Fieldwood (Apache)-WC-66 Unfiltered	14030032-04	Water	X	X	X	X
2/27/2014	Fieldwood (Apache)-EI-212	14030032-05	Water	X	X	X	X
2/27/2014	Fieldwood (Apache)-EI-212 Unfiltered	14030032-06	Water	X	X	X	X
3/3/2014	Fieldwood(Apache)-EI-53 Unfiltered	14030032-07	Water	X	X	X	X
3/3/2014	Fieldwood(Apache)-EI-53	14030032-08	Water	X	X	X	X
3/2/2014	Fieldwood(Apache)-EW826 Unfiltered	14030032-09	Water	X	X	X	X
3/2/2014	Fieldwood(Apache)-EW826	14030032-10	Water	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – dissolved mercury
(3) Method SW 218.6 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Fieldwood (Apache)-WC-65; Fieldwood (Apache)-WC-65 - Unfiltered; Fieldwood (Apache)-WC-66.	Lead	None	CCB1 contained lead (0.59 µ/L) >MDL but <RL; Sample results are ND.
Fieldwood (Apache)-WC-66 Unfiltered; Fieldwood (Apache)-EI-212; Fieldwood (Apache)-EI-212 Unfiltered; Fieldwood(Apache)-EI-53 Unfiltered.	Lead	None	CCB2 contained lead (0.61 µ/L) >MDL but <RL; Sample results are ND.
Fieldwood(Apache)-EI-53; Fieldwood(Apache)-EW826 Unfiltered; Fieldwood(Apache)-EW826.	Lead	None	CCB3 contained lead (0.61 µ/L) >MDL but <RL; Sample results are ND.
Fieldwood(Apache)-EW826	Hexavalent chromium	"R" at ND	%Rs of MS/MSD were "zero".

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – continuing calibration blank MDL– method detection limit
RL – Reporting limit R – Rejected
MS –Matrix Spike MSD –Matrix Spike Duplicate

WORK ORDER#14030994

SDG NO.	#14030994
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	August 5, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	X (ICB and CCB contained lead, and selenium)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for Cyanide) Unrelated sample was used for 6020 metals, and mercury)	X (Hexavalent chromium MS/MSD %Rs <low level of QC limits)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
24-Mar-2014	Fieldwood Apache)-GI-116	HS14030994-01	Water	X	X	X	X
29-Mar-2014	Fieldwood(Apache)-SM-128C	HS14030994-02	Water	X	X	X	X
30-Mar-2014	Fieldwood(Apache)-EI-315	HS14030994-03	Water	X	X	X	X
30-Mar-2014	Fieldwood(Apache)-EI-346	HS14030994-04	Water	X	X	X	X
30-Mar-2014	Fieldwood(Apache)-EI-342	HS14030994-05	Water	X	X	X	X
30-Mar-2014	Fieldwood(Apache)-SM-128A	HS14030994-06	Water	X	X	X	X
30-Mar-2014	Fieldwood(Apache)-EI-333	HS14030994-07	Water	X	X	X	X
31-Mar-2014	Fieldwood(Apache)-SM-268	HS14030994-08	Water	X	X	NA(5)	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide
(5) NA – not analyzed

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Fieldwood(Apache)-EI-346 Fieldwood(Apache)-EI-333	Lead	"U" for <RL	CCB contained lead>MDL but <RL; Sample result >MDL but <RL.
	Selenium	All ND.	CCB contained selenium >MDL but <RL; Sample results>MDL but <RL. No action for ND.
Fieldwood Apache)-GI-116	Lead	"U" for <RL	CCB contained lead >MDL but <RL; Sample results >MDL but <RL.
Fieldwood Apache)-GI-116 and Fieldwood(Apache)-EI-333	Hexavalent Chromium	"R" for ND	%Rs of MS/MSD (0, 3 and 4%).

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control

< – less than > – greater than ND – nondetect

CCB – Continuing Calibration Blank ICB – Initial Calibration Blank

MDL– method detection limit RL – Reporting limit

MB – method blank

MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – percent recoveries

WORK ORDER#14040241

SDG NO.	#14040241
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	August 21, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No(1)**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	X (3 days after the holding time, no qualifier was required for one sample.)
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	X MB contained copper 0.001483 mg/L, but no action for the ND samples.
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was also used for 6020 metals, and mercury.	X (MS or MSD %R for arsenic and nickel outside the QC limits. No qualifier was required since the corresponding MS or MSD were acceptable.) The MS/MSD %Rs >QC limits for Zinc. The data was qualified with "J" for sample Fieldwood (Apache)VR-326-DUP. The MS/MSD %Rs for hexavalent chromium and cyanide <QC limits.
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
03-Apr-2014	BHP Biliton Petroleum (GOM) Inc-GC-613	HS14040241-01	Water	X	NA	X	X
07-Apr-2014	Fieldwood(Apache)-BA-133-1	HS14040241-02	Water	X	NA	X	X
07-Apr-2014	Fieldwood(Apache)-BA-133-2	HS14040241-03	Water	X	NA	X	X
07-Apr-2014	BA-133-B	HS14040241-04	Water	NA(5)	NA	NA	X
07-Apr-2014	Mc MoRan-SM-141	HS14040241-05	Water	X	NA	X	X
31-Mar-2014	Fieldwood(Apache)-SS-207	HS14040241-06	Water	X	NA	X	X
16-Apr-2014	Castex-PL-18-1	HS14040241-07	Water	X	X	X	X
16-Apr-2014	Castex-PL-18-2	HS14040241-08	Water	X	X	X	X
17-Apr-2014	Fieldwood(Apache)VR-380	HS14040241-09	Water	X	X	X	X
16-Apr-2014	Fieldwood(Apache)VR-380 - Unfiltered	HS14040241-10	Water	NA	NA	NA	NA
17-Apr-2014	Fieldwood(Apache)VR-326	HS14040241-11	Water	X	X	X	X
17-Apr-2014	Fieldwood(Apache)VR-326 - Unfiltered	HS14040241-12	Water	NA	NA	NA	NA
17-Apr-2014	Fieldwood(Apache)VR-326-DUP	HS14040241-13	Water	X	X	X	X
17-Apr-2014	Fieldwood(Apache)VR-326-DUP Unfiltered	HS14040241-14	Water	NA	NA	NA	NA
16-Apr-2014	Fieldwood(Apache)GI-33-1	HS14040241-15	Water	X	X	X	X
16-Apr-2014	Fieldwood(Apache)-GI-33-2	HS14040241-16	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide
(5) NA – not analyzed

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Fieldwood(Apache)VR-326-DUP	Zinc	"J" for (+)	MS/MSD %Rs >QC limits
Fieldwood(Apache)-GI-33-2 And Mc MoRan-SM-141	Cyanide	"UJ" for ND	MS/MSD %R (74.5%) <QC limits
Mc MoRan-SM-141 and Fieldwood(Apache)VR-326	Hexavalent Chromium	"R" for ND	MS/MSD %R (6 or 15%) <QC limits

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect R- Rejected
ICB – Initial Calibration Blank CCB – continuing calibration blank
MDL– method detection limit RL – Reporting limit MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – Percent recoveries

WORK ORDER#14041149

SDG NO.	#14041149
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION(Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	07/16/2014r1

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for CCB and MB)	X (CCB contained arsenic, copper and selenium for some samples; MB contained copper and zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for 6020 metals for samples HS14041149-7 to -10.	X (%Rs of arsenic, copper, selenium, zinc, mercury and cyanide for sample Bennu-MC-941 MS/MSD were outside the QC limits.) (%Rs of hexavalent chromium were <QC limits for sample Arena-MI-669.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
22-Apr-2014	APC-GC-680	HS14041149-01	Water	X	X	X	X
21-Apr-2014	Arena-GI-78	HS14041149-02	Water	X	X	X	X
22-Apr-2014	Arena-MI-669	HS14041149-03	Water	X	X	X	X
23-Apr-2014	APC-GB-668-1	HS14041149-04	Water	X	X	X	X
23-Apr-2014	APC-GB-668-2	HS14041149-05	Water	X	X	X	X
25-Apr-2014	Bennu-MC-941	HS14041149-06	Water	X	X	X	X
28-Apr-2014	APC-EB-643-2	HS14041149-07	Water	X	X	X	X
28-Apr-2014	APC-EB-602-1	HS14041149-08	Water	X	X	X	X
30-Apr-2014	APC-EB-602-2	HS14041149-09	Water	X	X	X	X
30-Apr-2014	APC-EB-643-1	HS14041149-10	Water	X	X	X	X

** Unable to analyze Dissolved Metals at a lower dilution due to high sodium content and interferences.

The analyses for Dissolved Hexavalent Chromium were subcontracted to ALS Rochester

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 – Dissolved hexavalent chromium
(4) Method SW 9014 – Dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Bennu-MC-941	Arsenic	No action for U	%Rs of MS/MSD>QC limits
	Copper	"UJ" for U	%Rs of MS/MSD<QC limits
	Selenium	No action for U	%Rs of MS/MSD>QC limits
	Zinc	No action for U	%Rs of MS/MSD>QC limits
	Mercury	"UJ" for U	%Rs of MS/MSD<QC limits
	Cyanide	"UJ" for U	%Rs of MS/MSD<QC limits
Arena-MI-669	Hexavalent chromium	"UJ" for U	%Rs of MS/MSD<QC limits
APC-GB-668-1	Arsenic	"U"	CCB Arsenic (1.6 µg/L) >MDL but<RL, Sample result >MDL but <RL
Arena-GI-78, Arena-MI-669, and APC-GB-668-2.	Selenium	"U"	CCB selenium (1.9 µg/L) >MDL and <RL, Sample results >MDL but <RL.
Bennu-MC-941	Copper Zinc	No action for "U". "U" for >MDL but <RL.	Method blank contained Zinc (0.003511 mg/L) and copper (0.002291 mg/L), but samples results were >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – continuing calibration blank MDL– method detection limit
RL – Reporting limit MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate

WORK ORDER#14050069

SDG NO.	#14050069
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	August 18, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for 6020 metals, and mercury	X MS/MSD %Rs cyanide and hexavalent chromium were outside the QC limits.
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
28-Apr-2014	Castex-WC-96	HS14050069-01	Water	X	X	X	X
30-Apr-2014	Arena-PL-25	HS14050069-02	Water	X	X	X	X
30-Apr-2014	Arena-PL-25-Dup	HS14050069-03	Water	X	X	X	X
05-May-2014	Arena-SP-83	HS14050069-04	Water	X	X	X	X
05-May-2014	BEE-SS-198	HS14050069-05	Water	X	X	X	X
06-May-2014	APC-GC-608	HS14050069-06	Water	X	X	X	X
06-May-2014	BEE-EC-160	HS14050069-07	Water	X	X	X	X
07-May-2014	BEE-SA-13-2	HS14050069-08	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Arena-PL-25	Cyanide	"R" for ND	%Rs of MS/MSD for cyanide (19.5) were <QC limits.
Arena-PL-25-Dup	Hexavalent Chromium	"R" for ND	%Rs of MS/MSD for hexavalent chromium were "0".
Arena-SP-83	Hexavalent Chromium	"R" for ND	%Rs of MS/MSD for hexavalent chromium were "8%".

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – percent recoveries

WORK ORDER#14050411

SDG NO.	#14050411
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION(Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	07/25/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** [1]
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for CCB)	X (CCB9 contained selenium for several samples)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for Cyanide) Unrelated sample was used for 6020 metals, and mercury)	X (Hexavalent chromium MS/MSD %R <QC limits)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
08-May-2014	BEE-SA-13-1	HS14050411-01	Water	X	X	X	X
12-May-2014	BEE-A-13-3	HS14050411-02	Water	X	X	X	X
13-May-2014	Chevron-EI-65	HS14050411-03	Water	X	X	X	X
13-May-2014	Chevron-EI-24	HS14050411-04	Water	X	X	X	X
14-May-2014	Chevron-BA-A-105-2	HS14050411-05	Water	X	X	X	X
14-May-2014	Chevron-BA-A-105-1	HS14050411-06	Water	X	X	X	X
14-May-2014	Century-BS-53AI*	HS14050411-07	Water	X	X	X	X
14-May-2014	Century-BS-53A4	HS14050411-08	Water	X	X	X	X
14-May-2014	Century-BS-53A3	HS14050411-09	Water	X	X	X	X

* Century-BS-53AI should be Century-BS-53A1.
** Unable to analyze Dissolved Metals at a lower dilution due to high sodium content and interferences. The analyses for Dissolved Hexavalent Chromium were subcontracted to ALS Rochester

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
BEE-SA-13-1, BEE-A-13-3, Chevron-EI-65, Chevron-BA-A-105-2, and Chevron-BA-A-105-1.	Selenium	"U" for <RL	CCB9 selenium (0.58 µg/L) >MDL and <RL, Sample results >MDL but <RL.
Century-BS-53A4	Hexavalent Chromium	"R" for ND	MS/MSD %Rs (0 and 13) <QC limits

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – continuing calibration blank MDL– method detection limit
RL – Reporting limit MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate

WORK ORDER#14050675

SDG NO.	#14050675
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	August 21, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%).	X	
3. Blanks (PB, ICB/CCB)	X	X (ICB contained selenium and CCB contained nickel; PB contained zinc and CCB contained nickel.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for cyanide) Unrelated sample was used for mercury.	X (The MS/MSD %Rs of zinc and copper outside the QC limits. The MS/MSD %Rs for hexavalent chromium <QC limits.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
13-May-2014	Chevron-SM-288	HS14050675-01	Water	X	X	X	X
14-May-2014	Hall-Houston-GA-310	HS14050675-02	Water	X	X	X	X
14-May-2014	Chevron-HI-A-582	HS14050675-03	Water	X	X	X	X
14-May-2014	Chevron-EB-159-2	HS14050675-04	Water	X	X	X	X
14-May-2014	Chevron-GB-189-1	HS14050675-05	Water	X	X	X	X
14-May-2014	Chevron-EB-159-1	HS14050675-06	Water	X	X	X	X
14-May-2014	Chevron-EB-160-1	HS14050675-07	Water	X	X	X	X
15-May-2014	Century-BS-53 A2	HS14050675-08	Water	X	X	X	X
15-May-2014	BEE-SA-13-4	HS14050675-09	Water	X	X	X	X
15-May-2014	Century-BS-53 A5	HS14050675-10	Water	X	X	X	X
14-May-2014	Chevron-EB-160-2	HS14050675-11	Water	X	X	X	X
14-May-2014	Chevron-GB-189-2	HS14050675-12	Water	X	X	X	X
13-May-2014	Chevron-VR-214	HS14050675-13	Water	X	X	X	X
16-May-2014	BEE-GA-424	HS14050675-14	Water	X	X	X	X
19-May-2014	BEE-SA-13-5	HS14050675-15	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3)Method SW 218.6 – Dissolved hexavalent chromium
(4) Method SW 9014 – Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Chevron-HI-A-582 and Chevron-EB-159-2	Selenium	"U" for <RL	ICB and CCB contained selenium >MDL but <RL; sample results >MDL but <RL.
Chevron-GB-189-1, Chevron-EB-159-1, Chevron-EB-160-1, and Century-BS-53 A2.	Zinc	No action	PB contained zinc>MDL but <RL; Sample results were ND or >RL.
Chevron-VR-214	Zinc	"U" for <RL	CCB contained zinc>MDL but <RL; Sample results were ND or <RL. No action for ND.
Chevron-GB-189-2, Chevron-VR-214, BEE-GA-424, Century-BS-53 A5, and, Chevron-EB-160-2.	Copper	"U" for <RL.	ICB and CCB contained copper >MDL but <RL; Sample results were >MDL but <RL. No action for ND and >RL.
Century-BS-53 A2	Zinc	"J" for (+)	MS/MSD %Rs <QC limits
	Copper	No action for ND	MS/MSD %Rs >QC limits
BEE-SA-13-5	Hexavalent Chromium	"R" for ND	MS/MSD %Rs =0
Century-BS-53 A2	Hexavalent Chromium	"R" for ND	MS/MSD %Rs (0 and 15) <QC limits

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect R- Rejected
ICB – Initial Calibration Blank CCB – continuing calibration blank
MDL– method detection limit RL – Reporting limit
MB – method blank MS –Matrix Spike Matrix Spike Duplicate
%Rs – Percent recoveries

WORK ORDER#14050881

SDG NO.	#14050881
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	September 10, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X (2 days after holding time for cyanide analysis, no action is required.)	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for Cyanide) Unrelated sample was used for 6020 metals and mercury.	X MS/MSD %Rs for hexavalent chromium were outside the QC limits.
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
20-May-2014	McMoRan-PN-891-2	HS14050881-01	Water	X	X	X	X
19-May-2014	Chevron-SS-181	HS14050881-02	Water	X	X	X	X
26-May-2014	BP-GC-787	HS14050881-03	Water	X	X	X	X
27-May-2014	Chevron-VK-900	HS14050881-04	Water	X	X	X	X
27-May-2014	Chevron-WD-109	HS14050881-05	Water	X	X	X	X
27-May-2014	Chevron-MP-313	HS14050881-06	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
BP-GC-787	Hexavalent Chromium	"R" for ND	%Rs of MS/MSD were 0.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – percent recoveries

WORK ORDER#14060037

SDG NO.	#14060037
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION(Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	07/17/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for CCB)	X (CCB contained selenium and zinc)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Some 6020 metals, Hg and Cyanide)	X (MS/MSD %Rs were outside the QC limits for copper, lead and Hexavalent chromium for sample Chevron-ST-151.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
May 28-2014	Chevron-ST-151	HS14060037-01	Water	X	X	X	X
May 28-2014	Chevron-ST-37	HS14060037-02	Water	X	X	X	X
May 28-2014	Chevron-ST-52	HS14060037-03	Water	X	X	X	X
May 28-2014	Chevron-MP-30	HS14060037-04	Water	X	X	X	X
June 2, 2014	McMoRan-PN-891-3	HS14060037-05	Water	X	X	X	X
June 2, 2014	Chevron-GC-205	HS14060037-06	Water	X	X	X	X

** Unable to report dissolved metals at a lower dilution due to high concentrations of sodium and matrix interferences.

The analyses for Dissolved Hexavalent Chromium were subcontracted to ALS Rochester

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 – Dissolved hexavalent chromium
(4) Method SW 9014 – Dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Chevron-ST-151	Copper	None for ND.	MS/MSD %Rs >QC limits.
	Lead	"J" for (+).	MS/MSD %Rs<QC limits
	Zinc	None for concentration>4X of Spike amount.	MS/MSD %Rs >QC limits.
All affected samples.	Selenium	None	CCB contained selenium (0.73 µg/L) >MDL but <RL; Sample results were ND.
Chevron-ST-151 and Chevron-ST-37	Zinc	None for >RL; None for ND.	CCB zinc (2.6 µg/L) >MDL and <RL; Sample results >MDL and >RL.
Chevron-ST-151	Hexavalent chromium	"R"	The MS/MSD %Rs (0 and 3) <30%

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect R– Rejected
CCB – continuing calibration blank MDL– method detection limit
RL – Reporting limit MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – Percent recoveries

WORK ORDER#14060288

SDG NO.	#14060288
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	August 27, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No(1)**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	PB contained zinc >MDL but <RL; Sample results were ND or >RL. No action was required.
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for Cyanide); Unrelated sample was used for 6020 metals and mercury.	X (The MS/MSD %Rs for hexavalent chromium were <QC limits)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
03-Jun-2014	Chevron-VK-786	HS14060288-01	Water	X	X	X	X
04-Jun-2014	Chevron-MC-650	HS14060288-02	Water	X	X	X	X
04-Jun-2014	McMoRan-PN-891-5	HS14060288-03	Water	X	X	X	X
05-Jun-2014	Chevron-GI-37	HS14060288-04	Water	X	X	X	X
05-Jun-2014	Energy XXI-SP-49	HS14060288-05	Water	X	X	X	X
05-Jun-2014	Energy XXI-MP-61B	HS14060288-06	Water	X	X	X	X
05-Jun-2014	Energy XXI-MP-73	HS14060288-07	Water	X	X	X	X
05-Jun-2014	Chevron-GC-641	HS14060288-08	Water	X	X	X	X
05-Jun-2014	ENERGY XXI-EC-334	HS14060288-09	Water	X	X	X	X
10-Jun-2014	Freeport-MC-127	HS14060288-10	Water	X	X	X	X

**Unable to report metals results at a lower dilution due to high concentrations of sodium and interferences.

**Sample ID: Chevron-VK-786 (HS14060288-01) was analyzed outside of the holding time due to laboratory error. Sample results should be considered as estimated

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 – Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Freeport-MC-127	Hexavalent Chromium	"R" for ND	MS/MSD %Rs were "0".
Chevron-VK-786	Hexavalent Chromium	"R" for ND	MS/MSD %Rs (13) <QC limits

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect R- Rejected
ICB – Initial Calibration Blank CCB – continuing calibration blank
MDL– method detection limit RL – Reporting limit MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – Percent recoveries

WORK ORDER#14060753

SDG NO.	#14060753
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	August 25, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No(1)**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for CCB)	X CCB contained nickel>MDL but <RL.
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for cyanide) Unrelated sample was also used for 6020 metals, and mercury.	X The MS/MSD %Rs for hexavalent chromium were zero ("0").
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
16 June, 2014	ExMob-AC-25-1	HS14060753-01	Water	X	X	X	X
16 June, 2014	ExMob-AC-25-2	HS14060753-02	Water	X	X	X	X
16 June, 2014	ExMob-AC-25-3	HS14060753-03	Water	X	X	X	X
16 June, 2014	ExMob-AC-25-4	HS14060753-04	Water	X	X	X	X
16 June, 2014	ExMob-AC-25-5	HS14060753-05	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
ExMob-AC-25-2	Nickel	"U" for <RL	CCB contained nickel >MDL but <RL; Sample result >MDL but <RL.
ExMob-AC-25-1	Hexavalent Chromium	"R" for ND	MS/MSD %Rs were "0".

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect R- Rejected
ICB – Initial Calibration Blank CCB – continuing calibration blank
MDL– method detection limit RL – Reporting limit MB – method blank
MS – Matrix Spike MSD –Matrix Spike Duplicate %Rs – Percent recoveries

WORK ORDER#14060990

SDG NO.	#14060990
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	August 26, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No(1)**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for CCB)	X CCB contained nickel>MDL but <RL.
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for cyanide) Unrelated sample was also used for 6020 metals, and mercury.	X (The MS/MSD %Rs for hexavalent chromium were 6% and 7%).
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
17 June, 2014	Chevron-MP-300	HS14060990-01	Water	X	X	X	X
17 June, 2014	ExMob-Galv-209-3	HS14060990-02	Water	X	X	X	X
17 June, 2014	ExMob-Galv-209-1	HS14060990-03	Water	X	X	X	X
17 June, 2014	ExMob-Galv-209-2	HS14060990-04	Water	X	X	X	X
18 June, 2014	Freeport-VK-915-1	HS14060990-05	Water	X	X	X	X
18 June, 2014	Freeport-VK-915-2	HS14060990-06	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Chevron-MP-300, ExMob-Galv-209-3, ExMob-Galv-209-1, ExMob-Galv-209-2, Freeport-VK-915-1, and, Freeport-VK-915-2.	Nickel	"U" for <RL	CCB contained nickel >MDL but <RL; Sample result >MDL but <RL.
Freeport-VK-915-2	Hexavalent Chromium	"R" for ND	MS/MSD %Rs were 6% and 7%.

NOTE:

U – nondetect
(+) – positive result
J – estimated
QC – quality control
< – less than
> – greater than
ND – nondetect
R- Rejected
ICB – Initial Calibration Blank
CCB – Continuing Calibration Blank
MDL– method detection limit
RL – Reporting limit
MB – method blank
MS – Matrix Spike
MSD –Matrix Spike Duplicate
%Rs – Percent recoveries

WORK ORDER#14070394

SDG NO.	#14070394
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	September 16, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for mercury, selenium, nickel and zinc.)	X (PB for mercury and selenium, CCB for nickel and zinc contained low concentration>MDL, but <RL. But sample concentrations were ND, and no action is required.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for 6020 metals, mercury, cyanide, and hexavalent chromium.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
08-July-2014	Mar-EW-873A-3	HS14070394-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

WORK ORDER#14070395

SDG NO.	#14070395
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	September 16, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for mercury, nickel and selenium.)	X (CCB for nickel and PB for selenium and mercury were >MDL but <RL.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for mercury and cyanide.	X (The %Rs of MS/MSD for arsenic, nickel and zinc were outside the QC limit.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
08-July-2014	Mar-EW-873A-2	HS14070395-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Mar-EW-873A-2	Arsenic	No action for ND	%Rs of MS/MSD >QC limits.
	Nickel	No action for ND	%Rs of MS/MSD >QC limits
	Zinc	"J" for (+)	%Rs of MS/MSD <QC limits
	Nickel	"U"	CCB contained nickel >MDL but <RL; Sample result >MDL but <RL.
	Selenium	"U"	PB contained selenium>MDL but <RL; Sample result >MDL but <RL.
	Mercury	"U"	MB contained mercury >MDL but <RL; Sample result >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – percent recoveries

WORK ORDER#14070396

SDG NO.	#14070396
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	September 16, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for mercury, selenium, nickel and zinc.)	X (MB contained selenium and mercury >MDL, but <RL. CCB contained nickel and zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for metals, mercury, and cyanide. No MS/MSD for hexavalent chromium.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
08-July-2014	Mar-EW-873A-4	HS14070396-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Mar-EW-873A-4	Nickel and zinc	"U"	CCB contained nickel and zinc >MDL but <RL; Sample results for nickel and zinc >MDL but <RL.
	Selenium	No action.	MB contained selenium>MDL but <RL; Sample result was ND.
	Mercury	"U"	MB contained mercury >MDL but <RL; Sample result >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – percent recoveries

WORK ORDER#14070398

SDG NO.	#14070398
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	September 16, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for mercury, selenium, nickel and zinc.)	X (MB contained selenium and mercury >MDL, but <RL. CCB contained nickel and zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for metals, mercury, and cyanide. No MS/MSD for hexavalent chromium.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
08-July-2014	Mar-EW-873A-1	HS14070398-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 – Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Mar-EW-873A-4	Nickel and zinc	"U"	CCB contained nickel and zinc >MDL but <RL; Sample results for nickel and zinc >MDL but <RL.
	Selenium	No action.	MB contained selenium>MDL but <RL; Sample result was ND.
	Mercury	"U"	MB contained mercury >MDL but <RL; Sample result >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – percent recoveries

WORK ORDER#14070468

SDG NO.	#14070468
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	September 18, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for mercury, selenium, nickel and zinc.)	X (PB contained mercury and zinc, ICB and CCB contained selenium and nickel >MDL, but <RL. Sample result was >MDL but <RL for nickel.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for 6020 metals, and mercury.	X (%Rs of MS/MSD for hexavalent chromium and cyanide <QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
09-July-2014	McMoRan-PN-891-1	HS14070468-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
McMoRan-PN-891-1	Nickel	"U"	CCB contained nickel >MDL but <RL; Sample result for nickel >MDL but <RL.
	Mercury and Zinc	No action.	MB contained mercury and zinc >MDL but <RL; Sample results were NDs.
	Selenium	No action.	ICB contained selenium >MDL but <RL; Sample result was NDs.
	Hexavalent chromium	"R"	%Rs MS/MSD were 10%.
	Cyanide	"R"	%Rs MS/MSD were 13.5%.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – percent recoveries

WORK ORDER#14070778

SDG NO.	#14070778
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	September 24, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for mercury)	X (PB contained mercury >MDL but <RL; Sample results were >MDL but <RL.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for 6020 metals, and mercury.	X (%Rs of MS/MSD for hexavalent chromium and cyanide <QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
15-Jul-2014	Hess Corp.-GB-260-2	HS14070778-01	Water	X	X	X	X
17-Jul-2014	Hess Corp.-GB-260-1	HS14070778-02	Water	X	X	X	X
16-Jul-2014	Murphy-GC-338	HS14070778-03	Water	X	X	X	X
17-Jul-2014	Murphy-MC-736	HS14070778-04	Water	X	X	X	X
17-Jul-2014	Murphy-MC-582	HS14070778-05	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Hess Corp.-GB-260-2, Murphy-GC-338, Murphy-MC-736, and Murphy-MC-582.	Mercury	"U"	MB contained mercury >MDL but <RL; Sample results were >MDL but <RL.
Murphy-MC-736	Hexavalent chromium	"R"	%Rs MS/MSD were 13% and 14%.
Murphy-MC-582	Cyanide	No action.	%R of MS was 73.1%, but %R of MSD was 80%.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – percent recoveries

WORK ORDER#14071192

SDG NO.	#14071192
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	September 26, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for zinc)	X (PB contained zinc>MDL but <RL; Sample result was ND. No action was required.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for 6020 metals, mercury and cyanide.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
29-Jul-2014	McMoran-MP-299	HS14071192-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
McMoran-MP-299	Zinc	No action.	MB contained zinc>MDL but <RL; Sample result was ND, no action was required.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs – percent recoveries

WORK ORDER #HS14080162

SDG NO.	# HS14080162
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	October 10, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for cyanide) Unrelated samples were used for 6020 metals and Hg.	X %Rs of hexavalent chromium <QC limits for two samples.
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
05-Aug-2014	Nobel-VK-826	HS14080162-01	Water	X	X	X	X
11-Aug-2014	ERT-GC-237	HS14080162-02	Water	X	X	X	X
12-Aug-2014	Stone-MC-109	HS14080162-03	Water	X	X	X	X
14-Aug-2014	Stone-PL-22	HS14080162-04	Water	X	X	X	X
14-Aug-2014	Stone-PL-22-Dup	HS14080162-05	Water	X	X	X	X
14-Aug-2014	Stone-PL-23	HS14080162-06	Water	X	X	X	X
14-Aug-2014	Stone-EW-305-3	HS14080162-07	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Stone-PL-22	Hexavalent chromium	"R"	%Rs of MS/MSD were 3% and zero.
Nobel-VK-826	Hexavalent chromium	"R"	%Rs of MS/MSD were zero.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD – Matrix Spike and matrix spike duplicate SD – Matrix Spike Duplicate
%Rs – percent recoveries "R" – Rejected "UR" – Rejected ND

WORK ORDER #HS14080546

SDG NO.	# HS14080546
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	October 13, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium and lead)	X (ICB contained selenium, and CCB contained lead.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated samples were used for 6020 metals, Hg and cyanide.	X (MS/MSD %Rs of hexavalent chromium were zero.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
14-Aug-2014	ERT-EI-302	HS14080546-01	Water	X	X	X	X
14-Aug-2014	ERT-SM-130	HS14080546-02	Water	X	X	X	X
14-Aug-2014	ERT-EC-381	HS14080546-03	Water	X	X	X	X
14-Aug-2014	ERT-VR-331	HS14080546-04	Water	X	X	X	X
14-Aug-2014	ERT-EC-346	HS14080546-05	Water	X	X	X	X
14-Aug-2014	ERT-SS-224	HS14080546-06	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
All six samples	Selenium	No action	ICB contained selenium>MDL but <RL; Sample results were all ND.
ERT-EI-302	Lead	No action	CCB contained lead>MDL but <RL; Sample result was ND.
ERT-SM-130	Hexavalent chromium	"R"	%Rs of MS/MSD were zero. Sample result ND was rejected.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
PB – preparation blank SD –Matrix Spike Duplicate
MS/MSD – Matrix Spike/ Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected
"UR" – Rejected ND

WORK ORDER #HS14080572

SDG NO.	# HS14080572
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	October 13, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for nickel)	**X** (ICB contained selenium, and CCB and PB contained nickel)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated samples were used for 6020 metals, Hg and cyanide. No MS/MSD for hexavalent chromium.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
15-Aug-2014	Stone-VR-256	HS14080572-01	Water	X	X	X	X
19-Aug-2014	Stone-EW-305-1	HS14080572-02	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Stone-VR-256	Selenium	No action	ICB contained selenium>MDL but <RL; Sample result was ND.
Stone-EW-305-1	Nickel	"U"	CCB and PB contained nickel >MDL but <RL; Sample result was >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
PB – preparation blank
MS/MSD – Matrix Spike and matrix spike duplicate SD – Matrix Spike Duplicate
%Rs – percent recoveries "R" – Rejected "UR" – Rejected ND

WORK ORDER #HS14080602

SDG NO.	# HS14080602
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryl Lu
COMPLETION DATE	October 10, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for CCB and PB)	X (PB contained nickel, and CCB contained nickel and zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated samples were used for Hg and cyanide.	X (%Rs of MS/MSD for all 6020 metals were <30%. MS/MSD %Rs of cyanide were -0.125%.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X (Except for zinc)	X (Zinc>10%)
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
15-Aug-2014	Stone-ST-100	HS14080602-01	Water	X	X	X	X
15-Aug-2014	Stone-PL-5	HS14080602-02	Water	X	X	X	X
15-Aug-2014	Stone-ST-30	HS14080602-03	Water	X	X	X	X
15-Aug-2014	Stone-VK-989	HS14080602-04	Water	X	X	X	X
20-Aug-2014	Stone-EW-305-2	HS14080602-05	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Stone-ST-100, Stone-PL-5, Stone-ST-30, Stone-VK-989, and Stone-EW-305-2.	Zinc	No action	CCB contained zinc >MDL but <RL; Two sample results were >MDL and >RL, 3 samples were ND.
	Nickel	"U"	PB and CCB contained nickel >MDL but <RL; Sample results were >MDL but <RL.
Stone-PL-5	Arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.	"UJ" for ND; "J" for (+).	%Rs of MS/MSD were below 30%, but the PDS were >75%.
Stone-PL-5	Cyanide	"R"	%Rs of MS/MSD were below 30%, but no PDS was performed.
Stone-PL-5	Zinc	"J"	%D>10 for SD.

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control

< – less than > – greater than ND – nondetect

CCB – Continuing Calibration Blank ICB – Initial Calibration Blank

MDL– method detection limit RL – Reporting limit PDS – Post digestion Spike

PB – Preparation blank

MS –Matrix Spike SD –Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER #HS14080862

SDG NO.	# HS14080862
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	October 14, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X (except for selenium)	X ICB and CCB contained selenium.
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for 14080862-07 MS/MSD) Unrelated samples were used for 6020 metals, Hg, and cyanide.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
22-Aug-2014	McMoRan-ST-148	HS14080862-01	Water	X	X	X	X
22-Aug-2014	McMoRan-ST-148-DUP	HS14080862-02	Water	X	X	X	X
21-Aug-2014	ENERGY XXI-WD-73	HS14080862-03	Water	X	X	X	X
21-Aug-2014	ENERGY XXI-WD-30	HS14080862-04	Water	X	X	X	X
25-Aug-2014	ERI-HI-557	HS14080862-05	Water	X	X	X	X
26-Aug-2014	McMoRan-PN-891-4	HS14080862-06	Water	X	X	X	X
28-Aug-2014	ContangoOperators-EI-11	HS14080862-07	Water	X	X	X	X
28-Aug-2014	ContangoOperators-VR-170	HS14080862-08	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
McMoRan-PN-891-4	Selenium	"U"	ICB and CCB contained selenium >MDL but <RL; Sample result >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD – Matrix Spike and matrix spike duplicate SD – Matrix Spike Duplicate
%Rs – percent recoveries "R" – Rejected "UR" – Rejected ND

WORK ORDER#14081070

SDG NO.	#14081070
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	October 14, 2014 (r2)

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for CCB)	X (CCB contained nickel.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X Unrelated samples were used for cyanide and mercury.	X (%Rs of MS/MSD for copper, selenium, zinc and cyanide were <QC limits for one sample. MS/MSD %Rs of hexavalent chromium were zero.)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
27-August-2014	Stone-EC-46	HS14081070-01	Water	X	X	X	X
29-August-2014	Shell-ST-300	HS14081070-02	Water	X	X	X	X
29-August-2014	Shell-GC-158	HS14081070-03	Water	X	X	X	X
25-August-2014	Renaissance Offshore, LLC-55-266	HS14081070-04	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Stone-EC-46	Selenium	"UJ"	%Rs of selenium for MS/MSD were 9.91%, below 30%. But PDS %R>75%.
Stone-EC-46	Copper and Zinc	"UJ"	%Rs of MS/MSD were below QC limits.
Stone-EC-46	Cyanide	"R" for ND	%Rs of MS/MSD were below 30%; No PDS was performed.
Renaissance Offshore, LLC-55-266	Nickel	"U"	CCB contained nickel>MDL, but <RL; Sample result >MDL but <RL.
Stone-EC-46	Hexavalent chromium	"R" for ND	MS/MSD %Rs of hexavalent chromium were zero. No PDS was performed.

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#14090459

SDG NO.	#14090459
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	October 21, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for nickel and zinc)	X (PB contained nickel and zinc >MDL but <RL; Sample result was ND for nickel, no action is required. Zinc was >MDL but <RL, so "U" for zinc was applied.
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for 6020 metals, cyanide, and mercury.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
11-Sep-2014	McMoRan-PN-891-6	HS14090459-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
McMoRan-PN-891-6	Zinc	"U"	PB contained nickel and zinc >MDL but <RL; Sample result was ND for nickel, no action is required. Sample result for zinc >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
PB – Preparation blank
MS/MSD –Matrix Spike and Matrix Spike Duplicate %Rs – percent recoveries

WORK ORDER#14090523

SDG NO.	#14090523
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	October 21, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for zinc, nickel and selenium)	X (ICB, CCB and PB contained nickel, selenium and zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X Unrelated samples were used for metals and mercury.	X (%Rs of MS/MSD for cyanide were <30%. MS/MSD %Rs of hexavalent chromium were zero.)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
12-Sep-2014	Shell-MC-194	HS14090523-01	Water	X	X	X	X
12-Sep-2014	Shell-AC-857-1	HS14090523-02	Water	X	X	X	X
16-Sep-2014	Shell-AC-857-2	HS14090523-03	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Shell-AC-857-1	Cyanide	"R" for ND	%Rs of MS/MSD were below 30%; No PDS was performed.
Shell-MC-194, Shell-AC-857-1, and Shell-AC-857-2.	Nickel	"U"	ICB, CCB and PB contained nickel >MDL, but <RL; Sample results >MDL but <RL.
Shell-MC-194	Selenium	"U"	ICB and CCB contained selenium >MDL, but <RL; Sample result >MDL but <RL.
Shell-MC-194	Zinc	"U"	PB contained zinc >MDL, but <RL; Sample result >MDL but <RL.
Shell-AC-857-1	Hexavalent chromium	"R" for ND	MS/MSD %Rs of hexavalent chromium were zero. No PDS was performed.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#14090702

SDG NO.	HS14090702
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 2, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for lead)	X (PB contained lead, CCB contained lead and selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X Unrelated samples were used for metals, mercury and cyanide. No MS/MSD for hexavalent chromium.	
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
17-September-2014	McMoRan-PN-891-4	HS14090702-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
McMoRan-PN-891-4	Lead	"U"	PB and CCB contained lead >MDL, but <RL; Sample result >MDL, but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#14090838

SDG NO.	#14090838
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 02, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for lead)	X (PB contained lead, CCB contained lead and selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X Unrelated samples were used for metals and mercury.	X (Hexavalent chromium MS/MSD %Rs <QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
19-September-2014	Shell-AC-857-4	HS14090838-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Shell-AC-857-4	Lead	"U"	PB contained lead >MDL, but <RL; Sample result >MDL, but <RL.
Shell-AC-857-4	Hexavalent chromium	"R"	%Rs MS/MSD (4% and 0) <QC limits.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#14090959

SDG NO.	#14090959
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 5, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated samples were used for metals and mercury.	X (Cyanide and hexavalent chromium %Rs MS/MSD <QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
22-Sep-2014	McMo Ran-PN-891-5	HS14090959-01	Water	X	X	X	X
22-Sep-2014	Century-BS-53-3	HS14090959-02	Water	X	X	X	X
24-Sep-2014	McMoran-HI-A474	HS14090959-03	Water	X	X	X	X
24-Sep-2014	McMoran-HI-531	HS14090959-04	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
McMo Ran-PN-891-5	Cyanide	"R" for ND	%Rs of MS/MSD (-0.5%) <QC limits.
McMoran-HI-A474	Hexavalent chromium	"R" for ND	%Rs of MS/MSD=0.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#14091155

SDG NO.	#14091155
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 7, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for zinc and nickel)	X (PB contained Zinc, and CCB contained nickel.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Cyanide) Unrelated samples were used for metals and mercury.	X (Hexavalent chromium MS/MSD %Rs =0)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
25-Sep-2014	Century-BS-53-1	HS14091155-01	Water	X	X	X	X
29-Sep-2014	Tana-mp-265	HS14091155-02	Water	X	X	X	X
29-Sep-2014	Century-BS-53-2	HS14091155-03	Water	X	X	X	X
30-Sep-2014	WT-WD-65	HS14091155-04	Water	X	X	X	X
30-Sep-2014	Tana-MI-654-3	HS14091155-05	Water	X	X	X	X
30-Sep-2014	WT-VK-823-1	HS14091155-06	Water	X	X	X	X
29-Sep-2014	Tana-MI-654-1	HS14091155-07	Water	X	X	X	X
30-Sep-2014	WT-WD-72	HS14091155-08	Water	X	X	X	X
30-Sep-2014	WT-VK-823-2	HS14091155-09	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Tana-mp-265 and Century-BS-53-2	Zinc	"U"	PB contained zinc >MDL, but <RL; Sample results >MDL, but <RL.
Tana-mp-265, Century-BS-53-2, Tana-MI-654-3, And Tana-MI-654-1.	Nickel	"U"	CCB contained nickel >MDL, but <RL; Sample results >MDL, but <RL.
Century-BS-53-1 and Tana-mp-265	Hexavalent chromium	"R" for ND	%Rs of MS/MSD =0.

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank "UR" – Rejected ND value.
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#14100091

SDG NO.	#14100091
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	December 23, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for zinc)	X (PB contained Zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Cyanide) Unrelated samples were used for metals and mercury.	X (Hexavalent chromium MS/MSD %Rs =0)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
30-Sep-2014	Century-BS-53-5	HS14100091-01	Water	X	X	X	X
01-Oct-2014	Tana-MI-654-2	HS14100091-02	Water	X	X	X	X
01-Oct-2014	WT-MC-243	HS14100091-03	Water	X	X	X	X
02-Oct-2014	WT-HI-22	HS14100091-04	Water	X	X	X	X
02-Oct-2014	WT-HI-110	HS14100091-05	Water	X	X	X	X
02-Oct-2014	WT-EC-321	HS14100091-06	Water	X	X	X	X
02-Oct-2014	WT-WC-173	HS14100091-07	Water	X	X	X	X
02-Oct-2014	WT-WC-173-DUP	HS14100091-08	Water	X	X	X	X
02-Oct-2014	WT-HI-379	HS14100091-09	Water	X	X	X	X
02-Oct-2014	Century-BS-53-4	HS14100091-10	Water	X	X	X	X
06-Oct-2014	WT-VR-279	HS14100091-11	Water	X	X	X	X
07-Oct-2014	Pquest-SS-72	HS14100091-12	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
WT-HI-22 and WT-HI-379.	Zinc	"U"	PB contained zinc >MDL, but <RL; Sample results >MDL, but <RL.
Century-BS-53-4	Hexavalent chromium	"R" for ND	%Rs of MS/MSD =0.

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control

< – less than > – greater than ND – nondetect

CCB – Continuing Calibration Blank ICB – Initial Calibration Blank

MDL– method detection limit RL – Reporting limit

MB – method blank

MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#14100478

SDG NO.	#14100478
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 5, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for zinc, selenium and copper)	X (PB and CCB contained Zinc selenium and copper.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated samples were used for metals, mercury and cyanide.	X (%Rs MS/MSD for cyanide<QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
09-Oct-2014	WT-SS-300	HS14100478-01	Water	X	X	X	X
15-Oct-2014	ASOP-WD-117	HS14100478-02	Water	X	X	X	X
15-Oct-2014	McMoRan-PN-891-2	HS14100478-03	Water	X	X	X	X
16-Oct-2014	Fieldwood(Apache)-SM-149	HS14100478-04	Water	X	X	X	X
16-Oct-2014	Fieldwood(Apache)-SM-149-DUP	HS14100478-05	Water	X	X	X	X
20-Oct-2014	Fieldwood(Apache)-SA-10-1	HS14100478-06	Water	X	X	X	X
21-Oct-2014	Fieldwood(Apache)-SA-10-2	HS14100478-07	Water	X	X	X	X
22-Oct-2014	Fieldwood (Apache)-SA-10-3	HS14100478-08	Water	X	X	X	X
23-Oct-2014	Fieldwood(Apache)-SA-10-4	HS14100478-09	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Fieldwood(Apache)-SM-149 and Fieldwood(Apache)-SM-149-DUP	Zinc	No action	PB contained zinc >MDL, but <RL; Sample results >MDL, but >RL.
Fieldwood(Apache)-SA-10-1 and Fieldwood(Apache)-SA-10-2	Zinc	No action	PB contained zinc >MDL, but <RL; Sample results were ND.
Fieldwood(Apache)-SA-10-4	Zinc	"U"	PB and CCB contained zinc >MDL, but <RL; Sample result >MDL, but <RL.
Fieldwood(Apache)-SA-10-3 and Fieldwood(Apache)-SA-10-4	Selenium	No action	CCB contained selenium>MDL, but <RL; Sample results were NDs.
Fieldwood(Apache)-SA-10-3 and Fieldwood(Apache)-SA-10-4	Copper	No action	PB contained copper >MDL, but <RL; Sample results >MDL, and >RL.
Fieldwood(Apache)-SA-10-4	Cyanide	"R" for ND	%Rs of MS/MSD (-0.5% / -0.5%)

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#14101095

SDG NO.	#14101095
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	December 31, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	X (Mercury was out of holding Time for analysis.)
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	X (MB contained mercury, and ICB, CCB contained nickel, zinc and selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used for DUP.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (for cyanide). Unrelated samples were used for metals, cyanide and mercury.	X (No MS/MSD for hexavalent chromium.)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used for PDS for metals.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used for SD and Dup.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
24-Oct-2014	Fieldwood(Apache)-SA-10-5	HS14101095-01	Water	X	X	X	X
24-Oct-2014	Shell-GB-128-2	HS14101095-02	Water	X	X	X	X
28-Oct-2014	McMoRan-PN-891-3	HS14101095-03	Water	X	X	X	X
28-Oct-2014	Sandridge (Fieldwood)-SS-253	HS14101095-04	Water	X	X	X	X
29-Oct-2014	Sandridge (FIeldwood)-SP-60-C	HS14101095-05	Water	X	X	X	X
30-Oct-2014	Shell-GB-426-1	HS14101095-06	Water	X	X	X	X
03-Nov-2014	Shell-VK-956-1	HS14101095-07	Water	X	X	X	X
04-Nov-2014	Shell-VK-956-2	HS14101095-08	Water	X	X	X	X
04-Nov-2014	Shell-GB-128-1	HS14101095-09	Water	X	X	X	X
06-Nov-2014	Fieldwood (Apache)-SP-89	HS14101095-10	Water	X	X	X	X
07-Nov-2014	Shell-AC-857-5	HS14101095-11	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 – Dissolved hexavalent chromium
(4) Method SW 9014 – Dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Shell-GB-128-2, McMoRan-PN-891-3, Shell-VK-956-1, Shell-VK-956-2, and Shell-GB-128-1.	Nickel	"U"	CCB contained nickel>MDL but <RL; Sample results >MDL but <RL.
Associated samples	Zinc, lead and selenium	No action	ICB, CCB contained zinc, lead and selenium>MDL but <RL; Sample results either ND or >RL.
All samples.	mercury	"U"	MB contained mercury >MDL but <RL; Sample results >MDL but <RL.
All samples.	mercury	"J" for out of Holding time.	Holding time exceeded..

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike PB – Preparation Blank
ICB – initial calibration blank UJ – Estimated nondetect
CCB – continuing calibration blank MDL– method detection limit

WORK ORDER#14110364

SDG NO.	#14110364
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 6, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for mercury)	X (MB contained mercury.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Mercury) Unrelated samples were used for metals and cyanide.	X (%Rs MS/MSD for cyanide <QC limits)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
10-Nov-2014	Sandridge (Fieldwood)-EB-165-1	HS14110364-01	Water	X	X	X	X
10-Nov-2014	Sandridge (Fieldwood)-HI-A446	HS14110364-02	Water	X	X	X	X
10-Nov-2014	McMoRan-PN-891-1	HS14110364-03	Water	X	X	X	X
10-Nov-2014	Shell-AC-857-3	HS14110364-04	Water	X	X	X	X
10-Nov-2014	Sandridge(Fieldwood)-WC-485	HS14110364-05	Water	X	X	X	X
13-Nov-2014	Tarpon(Enven)-WC-265	HS14110364-06	Water	X	X	X	X
13-Nov-2014	Tarpon(Enven)-WC-661	HS14110364-07	Water	X	X	X	X
19-Nov-2014	Walter-PL-6	HS14110364-08	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Sandridge (Fieldwood)-EB-165-1, Sandridge (Fieldwood)-HI-A446, McMoRan-PN-891-1, Shell-AC-857-3, Sandridge(Fieldwood)-WC-485, Tarpon(Enven)-WC-265, Tarpon(Enven)-WC-661, Walter-PL-6.	Mercury	"U"	MB contained mercury>MDL but <RL; All sample results were >MDL but <RL.
Sandridge(Fieldwood)-WC-485	Cyanide	"UJ"	%Rs MS/MSD<QC limits

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control

< – less than > – greater than ND – nondetect

CCB – Continuing Calibration Blank ICB – Initial Calibration Blank

MDL– method detection limit RL – Reporting limit

MB – method blank PB – Preparation Blank

MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#14120030

SDG NO.	#14120030
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 13, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium)	X (ICB, CCBs contained selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (except for cyanide) Unrelated samples were used for metals and mercury.	X (Cyanide %Rs MS/MSD<QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
26-Nov-2014	Sandridge (Fieldwood)-WD-79	HS14090838-01	Water	X	X	X	X
26-Nov-2014	Sandridge (Fieldwood)-SM-39	HS14090838-02	Water	X	X	X	X
03-Dec-2014	Petrobras-WR-249-5	HS14090838-03	Water	X	X	X	X
03-Dec-2014	Fieldwood (Apache)-MI-622	HS14090838-04	Water	X	X	X	X
03-Dec-2014	Fieldwood (Apache)-MI-623	HS14090838-05	Water	X	X	X	X
03-Dec-2014	Sandridge (Fieldwood)-EB-165-2	HS14090838-06	Water	X	X	X	X
02-Dec-2014	Shell-MC-807	HS14090838-07	Water	X	X	X	X
02-Dec-2014	Shell-GB-426-2	HS14090838-08	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Sandridge (Fieldwood)-WD-79 and Sandridge (Fieldwood)-SM-39.	Selenium	"U"	ICB, CCBs contained selenium>MDL, but <RL; Sample results >MDL, but <RL.
Sandridge (Fieldwood)-WD-79	Cyanide	"UJ"	%Rs of MS/MSD,QC limits.

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control

< – less than > – greater than ND – nondetect

CCB – Continuing Calibration Blank ICB – Initial Calibration Blank

MDL– method detection limit RL – Reporting limit

MB – method blank

MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#14120279

SDG NO.	#14120279
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 9, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Mercury) Unrelated samples were used for metals and cyanide.	
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
05-Dec-2014	Petrobras-WR-249-4	HS14120279-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

WORK ORDER #14120388

SDG NO.	HS14120388
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 21, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Mercury and cyanide) Unrelated sample was used for metals. No MS/MSD for hexavalent chromium.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
09-Dec-2014	Petrobras-WR-249-1	HS14120388-01	Water	X	X	X	X
08-Dec-2014	Fieldwood (Apache)-MI-519-1	HS14120388-02	Water	X	X	X	X
10-Dec-2014	Sandridge (Fieldwood)-VR-371	HS14120388-03	Water	X	X	X	X
10-Dec-2014	Fieldwood (Apache)-SM-132	HS14120388-04	Water	X	X	X	X
09-Dec-2014	Fieldwood(Apache)-MI-S19-2	HS14120388-05	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

WORK ORDER #14120554

SDG NO.	HS14120554
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 20, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium)	X (CCB contained selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X Unrelated samples were used for metals, mercury and cyanide.)	X (Hexavalent chromium %Rs MS/MSD <30%)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
12-Dec-2014	Petrobras-WR-249-3	HS14120554-01	Water	X	X	X	X
15-Dec-2014	Petrobras-WR-249-2	HS14120554-02	Water	X	X	X	X
16-Dec-2014	Eni-WC-100-1	HS14120554-03	Water	X	X	X	X
17-Dec-2014	Eni-WC-100-2	HS14120554-04	Water	X	X	X	X
18-Dec-2014	WT-ST-229	HS14120554-05	Water	X	X	X	X
18-Dec-2014	Chevron-BA-105	HS14120554-06	Water	X	X	X	X
02-Dec-2014	Sandridge (Fieldwood)-WD-8D *	HS14120554-07	Water	NA	NA	NA	NA

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

*Sandridge (Fieldwood)-WD-8D (HS14120554-07) was not analyzed (NA) due to not received in time.

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
WT-ST-229 And Chevron-BA-105	Selenium	"U"	CCB contained selenium>MDL, but <RL; Sample results >MDL, but <RL.
Petrobras-WR-249-3	Hexavalent chromium	"UR" for ND	%Rs of MS/MSD were 12% / 12%.

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "UR" – Rejected ND.

WORK ORDER #15010212

SDG NO.	HS15010212
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	March 23, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (With exceptions for CCB and PB)	X (PB and CCB contained arsenic, and CCB contained selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Cyanide and mercury.) Unrelated sample was used for metals for 2 samples. No MS/MSD for hexavalent chromium.	X (%Rs MS/MSD for copper, nickel and zinc.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
07-Jan-2015	Ankor-SP-60	HS15010212-01	Water	X	X	X	X
13-Jan-2015	Fieldwood-VR-265	HS15010212-02	Water	X	X	X	X
13-Jan-2015	Fieldwood-BA-133	HS15010212-03	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Ankor-SP-60	Copper	"UJ"	%Rs MS/MSD copper <QC limits.
Ankor-SP-60	Zinc	"UR"	%Rs MS/MSD (18.4%) <30%.
Ankor-SP-60	Nickel	"UR"	%Rs MS/MSD (-91.3%) <30%.
Ankor-SP-60	Arsenic and Selenium	"U"	PB and CCB contained arsenic, and CCB contained selenium >MDL, but <RL; Sample result was >MDL, but <RL.
Fieldwood-VR-265 And Fieldwood-BA-133	Selenium	"U"	CCB contained selenium >MDL, but <RL; Sample results were >MDL, but <RL.

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control

< – less than > – greater than ND – nondetect RL – Reporting Limit

%Rs – percent recoveries MS/MSD –Matrix Spike/Matrix Spike Duplicate PB – Prep. Blank

CCB – Continuing Calibration Blank ICB – Initial Calibration Blank

MDL– method detection limit

WORK ORDER#15010788

SDG NO.	#15010788
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	February 26, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for zinc, copper and selenium)	X (MB contained mercury and zinc, and ICB and CCBs contained copper, but all sample results were ND, no action was required; CCB contained selenium>MDL but <RL.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Cyanide) Unrelated samples were used for metals and mercury.	X (No MS/MSD for hexavalent chromium)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
26-Jan-2015	Fieldwood-BA-491-1	HS15010788-01	Water	X	X	X	X
28-Jan-2015	Fieldwood-MI-622	HS15010788-02	Water	X	X	X	X
28-Jan-2015	Fieldwood-MI-623-1	HS15010788-03	Water	X	X	X	X
28-Jan-2015	Fieldwood-MI-623-2	HS15010788-04	Water	X	X	X	X
28-Jan-2015	EPL (Energy XXI)-WD-29	HS15010788-05	Water	X	X	X	X
26-Jan-2015	Talos-SS-111	HS15010788-06	Water	X	X	X	X
26-Jan-2015	Fieldwood-WC-66	HS15010788-07	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Fieldwood-BA-491-1, Fieldwood-MI-622, Fieldwood-MI-623-1, Fieldwood-MI-623-2, EPL (Energy XXI)-WD-29, Talos-SS-111, And Fieldwood-WC-66.	Selenium	"U"	CCBs contained selenium>MDL, but <RL; Sample results >MDL, but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#15020100

SDG NO.	#15020100
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	March 3, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium)	X (CCBs contained selenium>MDL but <RL; Sample results were >MDL but <RL.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Except for copper, nickel, cyanide and hexavalent chromium). Unrelated samples were also used for cyanide and mercury.	X (%Rs MS/MSD for copper, nickel, cyanide and Hexavalent chromium <QC limits.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
02-Feb-2015	Chevron-SM-217	HS15010200-01	Water	X	X	X	X
03-Feb-2015	EPL (Energy XXI)-SM-239	HS15010200-02	Water	X	X	X	X
07-Feb-2015	EPL (Energy XXI)-VR-38	HS15010200-03	Water	X	X	X	X
08-Feb-2015	Fieldwood-BA-491-2	HS15010200-04	Water	X	X	X	X
08-Feb-2015	Fieldwood-BA-491-3	HS15010200-05	Water	X	X	X	X
08-Feb-2015	Fieldwood-BA-491-4	HS15010200-06	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Chevron-SM-217; EPL (Energy XXI)-SM-239; EPL (Energy XXI)-VR-38; Fieldwood-BA-491-2; Fieldwood-BA-491-3; and, Fieldwood-BA-491-4.	Selenium	"U"	CCBs contained selenium >MDL, but <RL; Sample results were >MDL, but <RL.
Chevron-SM-217	Copper	"UJ"	%Rs MS/MSD (38.7) <QC limits.
Chevron-SM-217	Nickel	"UR"	%Rs MS/MSD (16.5) <30%.
Chevron-SM-217	Selenium and Zinc	No action	%R of MS <QC limit but the %R of MSD was acceptable.
Chevron-SM-217 And EPL (Energy XXI)-VR-38	Hexavalent chromium	"UR"	%Rs MS/MSD (3 and 7) <30%.
Chevron-SM-217	Cyanide	"UR"	%Rs MS/MSD (0.5) <30%.

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank "UR" – rejected nondetect
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER #15020879

SDG NO.	HS15020879
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	March 16, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Cyanide and hexavalent chromium.) Unrelated sample was used for mercury.	X (%Rs MS/MSD for arsenic, copper and nickel<30%. No action for zinc since sample result was >4 times of spike amount.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
10-Feb-2015	BEE-GA-424-1	HS15020879-01	Water	X	X	X	X
11-Feb-2015	BEE-GA-424-2	HS15020879-02	Water	X	X	X	X
12-Feb-2015	BEE-GA-424-3	HS15020879-03	Water	X	X	X	X
13-Feb-2015	BEE-GA-424-4	HS15020879-04	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
BEE-GA-424-1. BEE-GA-424-2, BEE-GA-424-3, and, BEE-GA-424-4.	Selenium	"U"	CCB contained selenium>MDL but <RL; Sample results were >MDL but <RL.
BEE-GA-424-1. BEE-GA-424-2, BEE-GA-424-3, and, BEE-GA-424-4.	Zinc	No action	ICB and MB contained zinc>MDL, but <RL; Sample results were >RL.
BEE-GA-424-1. BEE-GA-424-2, BEE-GA-424-3, and, BEE-GA-424-4.	Copper	No action	MB contained copper >MDL, but <RL; Sample results were ND.
BEE-GA-424-1.	Lead	"U"	MB contained lead >MDL, but <RL; Sample result was>MDL, but <RL.
BEE-GA-424-2, BEE-GA-424-3, and, BEE-GA-424-4.	Lead	No action	MB contained lead >MDL, but <RL; Sample results were ND.
BEE-GA-424-1. BEE-GA-424-2, BEE-GA-424-3, and, BEE-GA-424-4.	Arsenic, copper, and nickel	"R" for ND	%Rs MS/MSD for arsenic (-6.22%), copper (28.1), Nickel (2.1%) <30%.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit

WORK ORDER#15030010

SDG NO.	#15030010
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	April 1, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium, copper, and nickel)	X (CCB6 contained selenium; ICCB4 and CCB5 contained copper, nickel and selenium; And MB contained zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (except for hexavalent chromium)	X (Hexavalent chromium MS/MSD %Rs<QC limits.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
26-Feb-2015	Fieldwood-WC-33	HS15030010-01	Water	X	X	X	X
26-Feb-2015	Fieldwood-EC-14	HS15030010-02	Water	X	X	X	X
26-Feb-2015	Fieldwood-EC-14-DUP	HS15030010-03	Water	X	X	X	X
26-Feb-2015	Fieldwood-EC-261	HS15030010-04	Water	X	X	X	X
02-Mar-2015	Petrobras-WR-249-9	HS15030010-05	Water	X	X	X	X
02-Mar-2015	Petrobras-WR-249-8	HS15030010-06	Water	X	X	X	X
02-Mar-2015	Petrobras-WR-249-7	HS15030010-07	Water	X	X	X	X
02-Mar-2015	Petrobras-WR-249-6	HS15030010-08	Water	X	X	X	X
02-Mar-2015	Petrobras-WR-249-10	HS15030010-09	Water	X	X	X	X
04-Mar-2015	Fieldwood-ST-295	HS15030010-10	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 – Dissolved hexavalent chromium
(4) Method SW 9014 – Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Fieldwood-WC-33, Fieldwood-EC-14, Fieldwood-EC-14-DUP, and Fieldwood-EC-261.	Selenium	No action	CCB contained selenium>MDL, but <RL; Sample results were ND.
Petrobras-WR-249-9, Petrobras-WR-249-8, Petrobras-WR-249-7, Petrobras-WR-249-6, and Petrobras-WR-249-10.	Copper, nickel and selenium.	No action	ICCB4 and CCB5 contained copper, nickel and selenium>MDL but <RL; Sample results were all NDs.
Fieldwood-EC-261, Fieldwood-ST-295.	Copper and nickel	No action	CCBs contained copper and nickel >MDL but <RL; Sample results were all NDs.
Petrobras-WR-249-8, Petrobras-WR-249-7, and, Petrobras-WR-249-6.	Zinc	"U"	MB contained zinc>MDL, but <RL; Sample results >MDL but <RL.
Fieldwood-ST-295	Hexavalent chromium	"UJ"	%Rs MS/MSD<QC limits

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank "UJ" – estimated nondetect
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#15030617

SDG NO.	#15030617
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	April 9, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for zinc and selenium)	X (MB contained Zinc and CCB contained selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated samples were used for metals, mercury and cyanide.	X (%Rs MS/MSD<QC limits for hexavalent chromium)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
15-Mar-2015	Fieldwood-HI-376	HS15030617-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Fieldwood-HI-376	Zinc	"U"	MB contained zinc >MDL, but <RL; Sample result>MDL, but <RL.
	Selenium	"U"	CCB contained selenium>MDL, but <RL; Sample result>MDL, but <RL.
	Hexavalent chromium	"UJ"	%Rs MS/MSD <QC limits

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – Rejected

WORK ORDER#15040549

SDG NO.	#15040549
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	May 8, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	X (Cooler temperature was 10°C)
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium and zinc)	X (PB contained selenium; CCBs contained selenium and zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Cyanide) Unrelated samples were used for metals and mercury.	No MS/MSD for hexavalent chromium.
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%) and DUP (<25%)	Unrelated samples were used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	218.6 (3)	9014 (4)
13-Apr-2015	McMoRan-EC-33-2	HS14090838-01	Water	X	X	X	X

(1) Method SW 6020 – Dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Dissolved mercury
(3) Method SW 218.6 –Dissolved hexavalent chromium
(4) Method SW 9014 –Dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
McMoRan-EC-33-2	Selenium	"U"	PB and CCB contained selenium >MDL and <RL; Sample result >MDL and <RL.
McMoRan-EC-33-2	Zinc	No action	CCBs contained zinc>MDL and <RL; Sample result>RL.
McMoRan-EC-33-2	All analytes	"J" for (+) and "R" for ND.	Cooler temperature was 10°C when tl sample was received.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – Continuing Calibration Blank ICB – Initial Calibration Blank
MDL– method detection limit RL – Reporting limit
MB – method blank
MS/MSD –Matrix Spike/Matrix Spike Duplicate %Rs – percent recoveries "R" – rejected.

WORK ORDER#1309050

SDG NO.	#1309050 (Subcontract R1307426)
SITE	Gulf of Mexico
LABORATORY	ALS_NY
DATA VALIDATION	Cheryle Lu
COMPLETION DATE	11/21/2013

REVIEW CRITERIA	**Meet Criteria (1)**	
	Yes	**No**
1. Chain of Custody (COC), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data (%R 95-105%)	X	
3. Blanks (MB, ICB/CCB)	X	
4. Laboratory Control Sample Data (%R 90-110%)	X	
12. **Overall Assessment**	**X**	

(1) EPA Method 218.6 – Ion Chromatography for dissolved hexavalent chromium

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	**Field ID**	**Lab ID**	**Matrix**	**218.6 (1)**
10/4/2013	TANA-SM-118-SMI118 #1	R1307426-001	Water	X
10/4/2013	Chevron-EI-214-A-1(EI231A-1)	R1307426-002	Water	X

(1) EPA Method 218.6 – Ion Chromatography for dissolved hexavalent chromium

WORK ORDER NO. 1309670

REPORT NO.	#1309670
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION	Cheryle Lu
COMPLETION DATE	11/04/2013

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No (1)**
1. Chain of Custody (COC), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data (%R 90-110%)	X	
3. Blanks (PB, ICB/CCB)		CCB-Selenium (0.0027 mg/L)
4. Interference Check Sample Data (%R 80-120%)	X	
5. Laboratory Control Sample Data (%R 80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis (%R ICP-MS and hexavalent chromium 75-125%, Hg and cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards (%R 70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	**Field ID**	**Lab ID**	**Matrix**	**6020 (1)**	**7470 (2)**	**7196 (3)**	**9014 (4)**
9/16/2013	Colbalt-KC-163-Aegan#1	1309670-01	Sludge	X	X	X	X
9/13/2013	Shell-MC-934-Europa A8	1309670-02	Sludge	X	X	X	X

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Colbalt-KC-163-Aegan#1	Selenium	None	Result (0.0335 mg/L)>10x blank value
Shell-MC-934-Europa A8	Selenium	None	Result (0.0402 mg/L)>10x blank value

NOTE: U – non-detect > – greater than mg/L – milligrams per liter

WORK ORDER#13091230

SDG NO.	#13091230
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION	Cheryle Lu
COMPLETION DATE	11/04/2013

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except nickel)	X CCB- nickel (0.0011 mg/L)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (ICP-MS and Hg)	X (cyanide and hexavalent chromium)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
9/26/2013	Shell-gc-245-Troika PA	13091230-01	WBM	X	X	X	X

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide
(5) WBM – water based mud

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Shell-gc-245-Troika PA	Cyanide	"J" for (+)	MS %R <QC limit
Shell-gc-245-Troika PA	Hexavalent chromium	"UJ" for ND	MS %R <QC limit
Shell-gc-245-Troika PA	Nickel	"U" at RL	CCB contained nickel>MDL but <RL

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike
CCB – continuing calibration blank MDL– method detection limit RL – Reporting limit

WORK ORDER#1310372

SDG NO.	#1310372
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	02/05/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for selenium and hexavalent chromium)	X MB (PB) contained selenium (0.001731 mg/L), and ICB contained selenium (1.783µg/L). MB contained 0.004 mg/L of hexavalent chromium).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
10/3/2013	Chevron-KC 953 Rio Grande #1	1310372-01	Sludge	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Chevron-KC 953 Rio Grande #1	Selenium	None	MB (PB) and ICB contained selenium >MDL but <RL; Sample result >RL.
Chevron-KC 953 Rio Grande #1	Hexavalent chromium	None	MB contained hexavalent chromium 0.004 mg/L, but the sample result>RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method Blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit RL – Reporting limit

WORK ORDER#1310896

SDG NO.	#1310896
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION	Cheryle Lu
COMPLETION DATE	11/20/2013

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except selenium, hexavalent chromium and zinc)	X CCB contained selenium; MB contained hexavalent chromium and zinc.
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
10/16/2013	Stone-WC-176-OCS-G00762 #A001	1310896-01	Sludge	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Stone-WC-176-OCS-G00762 #A001	Selenium	"U" at RL	CCB6 contained selenium (0.00087 mg/L) >MDL but <RL; Sample result >MDL but <RL.
	Zinc	No action	MBLKW3 contained zinc (0.004342 mg/L) >MDL but <RL; Sample result >MDL and >RL.
	Hexavalent chromium	No action	WBLKW1 contained hexavalent chromium (0.004 mg/L) >MDL but <RL; Sample result was ND.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method Blank
CCB – continuing calibration blank MDL– method detection limit RL – Reporting limit

WORK ORDER#13101186

SDG NO.	#13101186
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-like)	Cheryle Lu
COMPLETION DATE	12/02/2013

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB/MB, ICB/CCB)	X (except for selenium and hexavalent chromium)	X MB contained selenium (0.001222 mg/L); MB contained hexavalent chromium (0.004 mg/L); ICB contained selenium (0.001168 mg/L).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	NA (Non-project sample was used)	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
10/22/2013	Shell-MC-807-A18 PA	#13101186-01	Sludge	X	X	X	X
10/24/2013	TANA-WD-59-WD 59 #3	#13101186-02	Sludge	X	X	X	X

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Shell-MC-807-A18 PA; TANA-WD-59-WD 59 #3	Selenium	None for "ND"	MB contained selenium (0.001222 mg/L) >MDL but <RL; Sample results are ND.
Shell-MC-807-A18 PA; TANA-WD-59-WD 59 #3	Selenium	None for "ND"	ICB contained selenium (0.001906 mg/L) >MDL but <RL; Sample results are ND.
Shell-MC-807-A18 PA; TANA-WD-59-WD 59 #3	Hexavalent chromium	None for "ND"	MB contained hexavalent chromium (0.004 mg/L) >MDL but <RL; Sample results are ND.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit RL – Reporting limit

WORK ORDER#13101305

SDG NO.	#13101305
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-like)	Cheryle Lu
COMPLETION DATE	12/02/2013

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB/MB, ICB/CCB)	X (except for selenium and nickel)	X ICB-Selenium (0.001168 mg/L) and CCB5-nickel (0.00088 mg/L)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (except for hexavalent chromium)	X (%R MS 9.2% <QC limit for hexavalent chromium)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
10/26/2013	Shell-GC-248-Glider 6	#13101305-01	Sludge	X	X	X	X
10/26/2013	APC-GC-727 #2 Bypass 02-Caesar Tonga	#13101305-02	Sludge	X	X	X	X

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
APC-GC-727 #2 Bypass 02-Caesar Tonga	Selenium	"U" at "RL"	ICB contained selenium (0.001168 mg/L) >MDL but <RL. Sample result >MDL but <RL.
APC-GC-727 #2 Bypass 02-Caesar Tonga, Shell-GC-248-Glider 6.	Nickel	"U" at "RL"	CCB contained nickel (0.00088 mg/L) >MDL but <RL. Sample results >MDL but <RL.
APC-GC-727 #2 Bypass 02-Caesar Tonga	Hexavalent chromium	"UJ" for "ND"	%R MS<QC limit

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike ICB – Initial calibration blank
CCB – continuing calibration blank MDL– method detection limit RL – Reporting limit

WORK ORDER#1311090

SDG NO.	#1311090
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	12/04/2013

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for selenium and nickel)	X ICB contained selenium (1.168 µg/L); CCB contained nickel (0.88 µg/L).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
10/30/2013	BP-GC-782-OCS-G 15609 #12	1311090-01	Sludge	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
BP-GC-782-OCS-G 15609 #12	Selenium	None for ND	ICB selenium >MDL but <RL; Sample result was ND.
	Nickel	None for >RL	CCB nickel >MDL but <RL; Sample result >RL.

NOTE:

U – nondetect	(+) – positive result	J – estimated	QC – quality control
< – less than	> – greater than	ND – nondetect	RL – Reporting Limit
%R – percent recovery	MS – Matrix Spike	MB – Method Blank	ICB – initial calibration blank
CCB – continuing calibration blank		MDL– method detection limit	RL – Reporting limit

WORK ORDER#1311151

SDG NO.	#1311151
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-like)	Cheryle Lu
COMPLETION DATE	12/04/2013

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB/MB, ICB/CCB)	X (except for selenium)	X CCB contained selenium (3.8 µg/L).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
11/01/2013	Walter-Sm-277-NA(Pits)	#1311151-01	Sludge	X	X	X	X

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Walter-Sm-277-NA(Pits)	Selenium	"U" at "RL"	CCB selenium >MDL but <RL; Sample result >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit RL – Reporting limit

WORK ORDER#1311612

SDG NO.	#1311612
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	01/02/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for selenium and copper)	X CCB contained selenium (0.55 µg/L) and copper (1.2 µg/L).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
11/8/2013	BP-GC-782-OCS-G 15609 #15	1311612-01	Sludge	X	X	X	X
11/12/2013	Shell-WR-508-Stones 5	1311612-02	Sludge	X	X	X	X
11/14/2013	Renaissance Offshore, LLC-WD-28-#2	1311612-03	Sludge	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
BP-GC-782-OCS-G 15609 #15 and Renaissance Offshore, LLC-WD-28-#2	selenium	"U" at "RL"	CCB selenium >MDL but <RL; Sample result <RL.

NOTE:

U – nondetect	(+) – positive result	J – estimated	QC – quality control
< – less than	> – greater than	ND – nondetect	RL – Reporting Limit
%R – percent recovery	MS – Matrix Spike	MB – Method Blank	ICB – initial calibration blank
CCB – continuing calibration blank		MDL– method detection limit	RL – Reporting limit

WORK ORDER#1311863

SDG NO.	#1311863
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	12/16/2013

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for hexavalent chromium, selenium and copper)	X MB contained hexavalent chromium (0.004 mg/L). CCB contained selenium (0.55 µg/L) and copper (1.2 µg/L).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (except for cyanide)	X (cyanide)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
11/15/2013	Shell-GB-372-Knight PA	1311863-01	Sludge	X	X	X	X
11/17/2013	AnKor-EI-208-J12	1311863-02	Sludge	X	X	X	X
11/19/2013	TANA-VR-284-VR 284#1	1311863-03	Sludge	X	X	X	X
11/18/2013	AnKor-SS-230-B2	1311863-04	Sludge	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
AnKor-SS-230-B2	hexavalent chromium	None for ND	MB contained 0.004 mg/L of hexavalent chromium; Sample result was ND.
TANA-VR-284-VR 284#1	copper	"U" at "RL"	CCB copper >MDL but <RL; Sample result <RL.
AnKor-EI-208-J12.	selenium	"U" at "RL"	CCB selenium >MDL but <RL; Sample result <RL.
TANA-VR-284-VR 284#1	Cyanide	"UJ" for ND	MS %R <QC limit.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method Blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit RL – Reporting limit

WORK ORDER#1312059

SDG NO.	#1312059
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	01/06/2014 (revised)

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for selenium)	X CCB contained selenium (0.84 µg/L).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
11/28/2013	BP-GC-782-OCS-G1509 #16	1312059-01	Sludge	X	X	X	X
12/05/2013	Shell-GC-248-Glider 8	1312059-02	Sludge	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
BP-GC-782-OCS-G1509 #16 And Shell-GC-248-Glider 8	selenium	"U" at "RL"	CCB selenium >MDL but <RL; Sample result <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method Blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit RL – Reporting limit

WORK ORDER#1312428

SDG NO.	#1312428
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	01/07/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
12/7/2013	BP-GC-782-OCS-G15609 #17	1312428-01	Sludge	X	X	X	X
12/13/2013	APC-EB-646 #11-Eriksson	1312428-02	Sludge	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

WORK ORDER#1312594

SDG NO.	#1312594
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-like)	Cheryle Lu
COMPLETION DATE	01/14/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** [1]
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB/MB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
12/12/2013	Chevron-WR-143-Coronado #2	#1312594-01	Sludge	X	X	X	X

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

WORK ORDER#1312729

SDG NO.	#1312729
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	02/05/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Cyanide MS was non-related sample)	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
12/13/2013	BP-GC-782-OCS-G-15609 #18	1312729-01	Sludge	X	X	X	X
12/13/2013	BP-GC-782-OCS-G-15609 #18-DUP	1312729-02	Sludge	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

WORK ORDER#13121096

SDG NO.	#13121096
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-like)	Cheryle Lu
COMPLETION DATE	01/23/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB/MB, ICB/CCB)	X (except for selenium)	CCB contained selenium (0.71 µg/L).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for Hg and chromium)	(Non-related samples were used for ICP-MS and cyanide, therefore, qualification is not Relevant.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
12/23/2013	Contango-Operators-SS-255-#001	#13121096-01	Sludge	X	X	X	X

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Contango-Operators-SS-255-#001	Selenium	"U" at RL	CCB contained selenium >MDL but <RL; Sample result >MDL But <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – continuing calibration blank MDL– method detection limit
RL – Reporting limit

WORK ORDER#1401198

SDG NO.	#1401198
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	02/05/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (MB/PB, ICB/CCB)	X (except for zinc and mercury)	X (MB/PB contained 2.816 µg /L of zinc; MB/PB contained 0.044 µg/L and CCB contained 0.053 µg/L of mercury).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (except for cyanide)	X (MS/MSD %Rs of cyanide <QC limits)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
01/05/2014	WT-EC-321-A-2	1401198-01	Sludge	X	X	X	X

(1) Method SW 6020 – dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 –dissolved mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
WT-EC-321-A-2	Zinc	None	MB/PB contained zinc >MDL but <RL; Sample result >RL.
WT-EC-321-A-2	Mercury	"U" at RL	MB/PB contained mercury >MDL, but <RL; Sample result>MDL but <RL.
WT-EC-321-A-2	Cyanide	"UJ" for ND.	%Rs of cyanide in MS/MSD <QC limits.

NOTE:
U – nondetect (+) – positive result J – estimated ND – nondetect
QC – quality control < – less than > – greater than MB – Method Blank
RL – Reporting Limit MDL– method detection limit %R – percent recovery
%Rs – percent recoveries MS – Matrix Spike MSD – Matrix Spike Duplicate
ICB – initial calibration blank CCB – continuing calibration blank

WORK ORDER#1401981

SDG NO.	#1401981
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	02/24/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (MB/PB, ICB/CCB)	X (Except for lead, and zinc.)	X (MBLK contained 0.07071 mg/kg of lead; CCB contained 1.1 µg/L of lead, and Zinc 3.301 µg/L; CCB contained 7.6 µg/L of Zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Except for cyanide)	X (total cyanide MS%R< QC limit; Dissolved cyanide MS/MSD %Rs <QC limits.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
1/23/2014	ERT-SM-130-E-22	1401981-01	Sludge	X	X	X	X

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Total and dissolved mercury
(3) Method SW 7196 – Total and dissolved hexavalent chromium
(4) Method SW 9014 – Total and dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
ERT-SM-130-E-22	Dissolved lead	"J" for positive result	SD (Serial dilution) >10%
	Total lead	None	MB contained lead (0.07071 mg/kg) >MDL but <RL. Sample result >RL.
	Total cyanide	'UJ" for ND	MS %R<QC limit
	Dissolved cyanide	'UJ" for ND	MS/MSD %R<QC limits
	Total lead and Zinc	None	CCB contained lead and Zinc >MDL but <RL; Total metal sample result contained lead and zinc >RL.
	Dissolved zinc	None	CCB contained Zinc >MDL but <RL; Dissolved metal sample result contained zinc >RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method Blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit RL – Reporting limit
SD – Serial Dilution

WORK ORDER#14011193

SDG NO.	#14011193
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	02/24/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for zinc and lead)	X (CCB contained 7.6 µg/L of zinc, and CCB contained 0.55 µg/L of lead.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Except for dissolved hexavalent chromium)	X (Dissolved hexavalent chromium)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	X (Unrelated sample was used for SD and Dup for metals.)	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
1/29/2014	ERT-SM-130-E-17 ST-1	14011193-01	Sludge	X	X	X	X

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Total and dissolved mercury
(3) Method SW 7196 – Total and dissolved hexavalent chromium
(4) Method SW 9014 – Total and dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
ERT-SM-130-E-17 ST-1	Dissolved Hexavalent chromium	None for ND	MS/MSD %Rs >QC limits
	Dissolved zinc	None	CCB contained zinc>MDL and >RL; Sample result >MDL and >RL.
	lead	None	CCB contained lead>MDL, but <RL; Sample result >MDL and >RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method Blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit RL – Reporting limit

WORK ORDER#1402264

SDG NO.	#1402264
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-like)	Cheryle Lu
COMPLETION DATE	03/10/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X (Sample was centrifuged for dissolved analyses; however, the liquid portion that separated did not pass through the filter. The dissolved analyses were cancelled per client procedure.)	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB/MB, ICB/CCB)	X (except for selenium and lead)	CCB contained selenium (0.71 µg/L) and lead (1.1 µg/L).
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (Unrelated samples were used for metal MS/MSD.)	
8. Post Digestion Spike (%R 75-125%)	X (Unrelated sample was used.)	
9. ICP Serial Dilution (%D<10%)	X (Unrelated sample was used.)	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
02/03/2013	Shell-MC-525-Rydberg Deep	#1402264-01	Sludge	X	X	X	X

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – mercury
(3) Method SW 7196 – dissolved hexavalent chromium
(4) Method SW 9014 – dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Shell-MC-525-Rydberg Deep	Selenium	"U" at RL	CCB contained selenium >MDL but <RL; Sample result >MDL But <RL.
Shell-MC-525-Rydberg Deep	Lead	None	CCB contained lead >MDL but <RL; Sample result >MDL and >RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect
CCB – continuing calibration blank MDL– method detection limit
RL – Reporting limit

WORK ORDER#1402964

SDG NO.	#1402964
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryl Lu
COMPLETION DATE	04/03/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for MS/MSD for ICP-MS metals and hexavalent chromium.	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data if available.

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
02/18/2014	Shell-WR-508-Stone 7	1402964-01	WBM	X	X	X	X
02/21/2014	Chevron E.I.360 C18	1402964-02	WBM	X	X	X	X

WBM – Water Based Mud
(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

Note: Samples "Shell-WR-508-Stone 7" and "Chevron E.I.360 C18" were not able to be analyzed for dissolved analyses due to the inability to filter the liquid portion after centrifuging.

WORK ORDER #HS14030977

SDG NO.	**HS14030977**
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION	Cheryle Lu
COMPLETION DATE	08/04/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X (3 days after the holding time)	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis (%R for ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (For hexavalent chromium and cyanide) Unrelated sample was used for ICP-MS metals and mercury.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards (%R 70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470/ 7471 (2)	7196 (3)	9014 (4)
25-Mar-2014	Chevron-EI-360(C)-EI 361C-19	HS14030977-01(5)	Sludge	X	X	X	X
25-Mar-2014	Chevron-EI-360©-EI 361C-19 DUP	HS14030977-02(5)	Sludge	X	X	X	X
26-Mar-2014	NOBLE-GC-40-Katmai	HS14030977-03(6)	Sludge	X	X	X	X
29-Mar-2014	Fieldwood(Apache)-MP-302-B-19	HS14030977-04(5)	Sludge	X	X	X	X

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470/7471 – Total and dissolved mercury.
(3) Method SW 7196 – Total and dissolved hexavalent chromium.
(4) Method SW 9014 – Total and dissolved cyanide.
(5) Samples only analyzed for total amount of metals and mercury.
(6) Sample NOBLE-GC-40-Katmai obtained for total and dissolved amount of metals and mercury.

WORK ORDER#HS14040799

SDG NO.	**HS14040799**
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION	Cheryle Lu
COMPLETION DATE	July 22, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (for Fieldwood (Apache)-S, ERT-EI-302-C-2, and Walter-HI-A-469-NA, And Fieldwood(Apache)-SS-193-#A-6ST)	X ICB (cadmium and lead) and CCB (copper, lead, nickel and zinc) were detected for Fieldwood (Apache)-SS-193-#A-6ST-DUP.
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis (%R for ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for hexavalent chromium). Unrelated sample was used for ICP-MS metals and mercury.	X (Cyanide MS/MSD < QC limits for ERT-EI-302-C-2.)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards (%R 70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471A (2)	7196 (3)	9014 (4)
11-Apr-2014	Walter-HI-A-469-NA	HS14040799-01	Sludge	X	X	X	X
23-Apr-2014	ERT-EI-302-C-2	HS14040799-02	Sludge	X	X	X	X
24-Apr-2014	Fieldwood(Apache)-SS-193-#A-6ST	HS14040799-03	Sludge	X	X	X	X
24-Apr-2014	Fieldwood(Apache)-SS-193-#A-6ST-DUP	HS14040799-04	Sludge	X	X	X	X

The water based muds in this report were not able to be analyzed for dissolved analyses.

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471A – mercury
(3) Method SW 7196 – hexavalent chromium
(4) Method SW 9014 – cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
ERT-EI-302-C-2	Cyanide	"UJ" for ND	MS/MSD %Rs of cyanide <QC limits.
Fieldwood (Apache)-SS-193-#A-6ST-DUP	Lead	No action	CCB contained lead (5.3 mg/kg) >RL; Sample result >RL.
	cadmium	"U"	ICB contained cadmium (0.609 mg/kg) >MDL but <RL; Sample result >MDL but <RL.
	copper	No action	CCB contained copper (7 mg/kg) >RL; Sample result >RL.
	Nickel	No action	CCB contained nickel (2.8 mg/kg) >RL; Sample result >RL.
	Zinc	No action	CCB contained zinc (36.4 mg/kg) >RL; Sample result >RL.

NOTE:
U – nondetect (+) – positive result J – estimated UJ – Estimated nondetect
QC – quality control < – less than > – greater than ND – nondetect
RL – Reporting Limit %R – percent recovery %Rs – percent recoveries
RPD– Relative percent difference MS – Matrix Spike MSD – Matrix Spike Duplicate
CCB – continuing calibration blank

WORK ORDER#HS14041277

SDG NO.	**HS14041277**
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION	Cheryle Lu
COMPLETION DATE	7/4/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for hexavalent chromium). Unrelated sample was used for ICP-MS metals and mercury. No qualification was required.	X (for Cyanide in sample HS14041277-01)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards (%R 70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471A (2)	7196 (3)	9014 (4)
28-Apr-2014	APC-GC-683 #2-Caesar Tonga	HS14041277-01	Sludge	X	X	X	X

**Sample in this report was not able to be reported as dissolved due to insufficient separation of water from the mud.

(1) Method SW 6020 – arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471A – mercury
(3) Method SW 7196 – hexavalent chromium
(4) Method SW 9014 – cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
APC-GC-683 #2-Caesar Tonga	Cyanide	"UJ" for ND	MS/MSD %Rs of cyanide <QC limits and RPD >QC limit.

NOTE:
U – nondetect (+) – positive result J – estimated UJ – Estimated nondetect
QC – quality control < – less than > – greater than ND – nondetect
RL – Reporting Limit %R – percent recovery %Rs – percent recoveries
RPD– Relative percent difference MS – Matrix Spike MSD – Matrix Spike Duplicate
CCB – continuing calibration blank

WORK ORDER#14050285

SDG NO.	#14050285
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	07/14/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for CCB)	X (CCB contained lead 1.3 µg/L, and selenium 0.93 µg/L)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for Cyanide). Unrelated sample was used for ICP-MS metals, mercury and hexavalent chromium.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
06-May-2014	APC-KC-874-#1	HS14050285-01	Sludge	X	X	X	X
07-May-2014	SHELL-MC-812-KaiKias	HS14050285-02	Sludge	X	X	X	X

**Insufficient water produced after centrifuging water based mud to perform dissolved analyses.

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total dissolved hexavalent chromium
(4) Method SW 9014 – Total dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
APC-KC-874-#1	lead	No action	CCB contained lead>MDL, But <RL; Sample result >MDL and >RL
APC-KC-874-#1 and SHELL-MC-812-KaiKias	Selenium	No action	CCB contained selenium>MDL but <RL; Sample result >MDL and >RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method Blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit

WORK ORDER#14050885

SDG NO.	#14050885
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	07/14/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for CCB)	X (CCB contained selenium 2.9 µg/L)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (For hexavalent chromium and cyanide) Unrelated sample was used for ICP-MS metals and mercury.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
20-May-2014	NOBLE-MC-782-Dantzler	HS14050885-01	Sludge	X	X	X	X
21-May-2014	Fieldwood(Apache)-MP-153-#B-3ST	HS14050885-02	Sludge	X	X	X	X
26-May-2014	BHP-GC-653-SB103	HS14050885-03	Sludge	X	X	X	X

**Insufficient water produced after centrifuging water based mud to perform dissolved analyses.

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total dissolved hexavalent chromium
(4) Method SW 9014 – Total dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
NOBLE-MC-782-Dantzler	Selenium	"U" for (+)	CCB contained selenium>MDL but <RL; Sample results >MDL but <RL.
Fieldwood(Apache)-MP-153-#B-3ST	Selenium	"U" for (+)	CCB contained selenium>MDL but <RL; Sample results >MDL but <RL.
BHP-GC-653-SB103	Selenium	None for "U"	CCB contained selenium>MDL but <RL; Sample results >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method Blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit

WORK ORDER #HS14060166

SDG NO.	**HS14060166**
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION	Cheryle Lu
COMPLETION DATE	08/04/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X (1-3 days after holding time)	
2. Calibration Verification Data %R (90-110%)	X	
3. Blanks (PB, ICB/CCB)		X (Copper, arsenic and selenium were found in PB, ICB or CCB. ICB and CCB contained lead >MDL but <RL; Sample results contained lead >RL, no action was required.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis (%R for ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (For mercury and cyanide) Unrelated sample was used for ICP-MS metals and hexavalent chromium.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards (%R 70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
01-June-2014	Chevron-KC-10-KC10-#001	HS14060166-01	Sludge	X	X	X	X
24-May-2014	BP-AV-362-Bright	HS14060166-02	Sludge	X	X	X	X
03-June-2014	Chevron-VR-245(H-F)-VR245F-5ST	HS14060166-03	Sludge	X	X	X	X
09-June-2014	Shell-MC-935-OGSG-07976 A09	HS14060166-04	Sludge	X	X	X	X

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470/7471 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total dissolved cyanide
(5) Samples only analyzed for total amount of metals mercury hexavalent chromium and cyanide.

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Chevron-KC-10-KC10-#001 and Chevron-VR-245(H-F)-VR 245F-5ST	Cyanide	None	1-3 days Out of Holding time. No action.
Chevron-KC-10-KC10-#001	Arsenic	"U" for <RL	CCB contained arsenic >MDL but <RL; Sample result >MDL but <RL.
Chevron-KC-10-KC10-#001	Copper	"U" for <RL	PB and CCB contained arsenic >MDL but <RL; Sample result >MDL but <RL.
Chevron-VR-245(H-F)-VR	Selenium	"U" for <RL	CCB contained arsenic >MDL but <RL; Sample result >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated UJ – Estimated nondetect
QC – quality control < – less than > – greater than ND – nondetect
RL – Reporting Limit %R – percent recovery %Rs – percent recoveries
RPD– Relative percent difference MS – Matrix Spike MSD – Matrix Spike Duplicate
CCB – continuing calibration blank

WORK ORDER#14060751

SDG NO.	#14060751
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	August 13, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No[1]**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for CCB)	X (Water CCB contained nickel)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for Cyanide and hexavalent chromium.) Unrelated sample was used for 6020 metals, and mercury)	
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%)	X	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Da	Field ID	Lab ID	Matrix	6020 (1)	7470/ 7471 (2)	7196 (3)	9014 (4)
16-Jun-2014	BP-MC-608-OCSG 0983 8EA-2 *	HS14060751-01	Sludge	X	X	X	X
16-Jun-2014	WT-SS-349-A16	HS14060751-02	Sludge	X	X	X	X

* Unable to centrifuge enough water to perform dissolved analyses on sample BP-MC-608-OCSG 0983 8EA-2.

(1) Method SW 6020 – Total and/or dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470/7471 – Total and/or dissolved mercury
(3) Method SW 7196 –Total and/or dissolved hexavalent chromium
(4) Method SW 9014 –Total and/or dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
WT-SS-349-A16	Nickel	No action	CCB contained nickel>MDL but <RL; Sample result >MDL and >RL.

NOTE:

U – nondetect (+) – positive result J – estimated QC – quality control < – less than
> – greater than ND – nondetect ICB – Initial Calibration Blank CCB – continuing calibration blank
MDL– method detection limit RL – Reporting limit MB – method blank
MS –Matrix Spike MSD –Matrix Spike Duplicate %Rs –Percent recoveries

WORK ORDER#14070030

SDG NO.	#14070030
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	September 17, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No(1)**
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X (Holding time is acceptable for 6020 metals)	X (Holding time for analysis was exceeded for mercury, cyanide and hexavalent chromium. Dissolved metals were unable to collect for analysis.)
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except selenium)	X CCB contained selenium >MDL but <RL; Sample result>RL, no action is required.
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	Unrelated sample was used for 6020 metals, mercury, cyanide, and hexavalent chromium.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis (%RSD<5%)	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data.

TABLE 1

CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	719.6 (3)	9014 (4)
29-June-2014	BP-MC-776-#6(XP1)	HS14070030-01	Sludge	X	X	X	X

• Unable to centrifuge enough water to perform dissolved analyses.

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 719.6 –Total hexavalent chromium
(4) Method SW 9014 –Total cyanide

WORK ORDER#14070668

SDG NO.	#14070668
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	10/01/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for selenium with qualifier of "U")	X (MB and CCB contained zinc and nickel, ICB and CCB contained selenium)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for hexavalent chromium) Unrelated sample was used for ICP-MS metals, cyanide and mercury.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
14-Jul-2014	APC-GC-903-Heidelberg,#4	HS14070668-01	Sludge	X	X	X	X
13-Jul-2014	ExMob-MC-211-Julia DCI-1	HS14070668-02	Sludge	X	X	X	X

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total and dissolved mercury
(3) Method SW 7196 – Total and dissolved hexavalent chromium
(4) Method SW 9014 – Total and dissolved cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
APC-GC-903-Heidelberg,#4 and ExMob-MC-211-Julia DCI-1	selenium	"U"	ICB and CCB contained selenium>MDL but <RL; Sample result was>MDL but <RL.
APC-GC-903-Heidelberg,#4 and ExMob-MC-211-Julia DCI-1	Nickel	No action	CCB contained nickel>MDL but <RL; Sample results were >RL. No action was required.
APC-GC-903-Heidelberg,#4 and ExMob-MC-211-Julia DCI-1	lead	No action	CCB contained lead>MDL but <RL; Sample results were >RL. No action was required.
APC-GC-903-Heidelberg,#4 and ExMob-MC-211-Julia DCI-	zinc	No action	CCB and PB contained zinc>MDL but <RL; Sample results were >RL. No action was required.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method Blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit

WORK ORDER#14071101

SDG NO.	#14071101
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	09/29/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for zinc.)	X (MB contained zinc>MDL but <RL; Sample results were >RL, no action was required.
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X (for Cyanide and hexavalent chromium). Unrelated sample was used for ICP-MS metals, and mercury.	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
19-Jul-2014	Arena-EI-338-Platform K Wells	HS14071101-01	Sludge	X	X	X	X
22-Jul-2014	Chevron-SM-217-SMI 217 #235	HS14071101-03	Sludge	X	X	X	X
27-Jul-2014	Ankor-VR-379-A8	HS14071101-04	Sludge	X	X	X	X
27-Jul-2014	Arena-EI-227-Well No.B002	HS14071101-05	Sludge	X	X	X	X
31-Jul-2014	BHPBP-AT-618-SB03	HS14071101-06	Sludge	X	X	X	X

**Unable to centrifuge off enough water to perform the dissolved analyses.

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Any Sample	Hexavalent chromium	None	Hexavalent chromium %R of MS was <QC limit but the %R of MSD was acceptable, no action was required.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike MB – Method Blank ICB – initial calibration blank
CCB – continuing calibration blank MDL– method detection limit

WORK ORDER#14080204

SDG NO.	#14080204
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	9/30/2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X (except for cyanide)	X (Cyanide holding time was exceeded.)
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (MB contained zinc, but sample result>RL, no action was required.)	X (CCB contained selenium >MDL but <RL; Sample result >MDL but <RL.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%)	X Unrelated sample was used for ICP-MS metals, cyanide, mercury and hexavalent chromium.)	
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
30-Jul-2014	Shell-WE-508-Stones 5 Redrill	HS14080204-01	Sludge	X	X	X	X

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

TABLE 2

QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Shell-WE-508-Stones 5 Redrill	Selenium	"U"	CCB contained selenium>MDL but <RL; Sample result>MDL but <RL.

NOTE:

U – nondetect	(+) – positive result	J – estimated	QC – quality control
< – less than	> – greater than	ND – nondetect	RL – Reporting Limit
%R – percent recovery	MS – Matrix Spike	MB – Method Blank	ICB – initial calibration blank
CCB – continuing calibration blank		MDL– method detection limit	

WORK ORDER#14080703

SDG NO.	#14080703
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	November 18, 2014 (revision1)

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium)	X (MB/CCB contained selenium>MDL but <RL; Sample result >RL, no action is required.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (for total 6020, Hg and cyanide) Unrelated samples were used for dissolved metals, and mercury.	X %Rs (24% and 25.9%) for solid hexavalent chromium<QC limit,
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
18-Aug-2014	Ankor-VR-379-A35T	HS14080703-01	Sludge	X	X	X	X
26-Aug-2014	Castex-HI-131	HS14080703-02	Sludge	X	X	X	X
30-Aug-2014	Shell-MC943-399-Power Nap	HS14080703-03	Sludge	X	X	X	X

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Total and dissolved mercury
(3) Method SW 7196 – Total and dissolved hexavalent chromium
(4) Method SW 9014 – Total and dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Ankor-VR-379-A35T	Zinc	No action	%Rs for zinc (MS 72.9% and MSD 76.8%), MSD was acceptable, no action.
Ankor-VR-379-A35T And Castex-HI-131	Selenium	No action	CCB and MB contained selenium>MDL but <RL; Sample result >MDL and >RL.
Ankor-VR-379-A35T	Hexavalent chromium	"R"	Solid MS/MSD %Rs (24% and 25.9%) <30%.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
ICB – initial calibration blank CCB – continuing calibration blank
MDL– method detection limit "R" – Rejected PB –Preparation Blank

WORK ORDER#14090213

SDG NO.	#14090213
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	October 23, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium)	X (CCB and PB contained selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (Lead and zinc >4X spike amount, no action)	X (%Rs of hexavalent chromium<QC limits)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
04-Sep-2014	GCER-GI-82-GI 82#2	HS14090213-01	Sludge	X	X	X	X

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Total and dissolved mercury
(3) Method SW 7196 – Total and dissolved hexavalent chromium
(4) Method SW 9014 – Total and dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
GCER-GI-82-GI 82#2	Selenium	No action	CCB and PB contained selenium >MDL but<RL; Sample result was >RL.
GCER-GI-82-GI 82#2	Hexavalent chromium	"UJ" for ND	%Rs (42.8% and 45.2%) were<QC limits.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
MB – Method Blank PB –Preparation Blank MDL– method detection limit
ICB – initial calibration blank CCB – continuing calibration blank
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate "R" – Rejected

WORK ORDER#14090321

SDG NO.	#14090321
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	October 24, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for lead, selenium, nickel and zinc)	X (MB, ICB and CCB contained selenium, lead, nickel and zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	X (The difference between parent sample and the duplicate for selenium was <RL, no action was required.
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (For solid metals, mercury and cyanide). Unrelated sample was also used for metals and water mercury.	X (Solid % Rs of hexavalent chromium<QC limits)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
08-Sep-2014	Ankor-MC-21-BIOS	HS14090321-01	Sludge	X	X	X	X
09-Sep-2014	TANA-MI-654-OCS-G--34671#3-1	HS14090321-02	Sludge	X	X	X	X
10-Sep-2014	Arena-VR-342-Well No.A005	HS14090321-03	Sludge	X	X	X	X

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Total and dissolved mercury
(3) Method SW 7196 – Total and dissolved hexavalent chromium
(4) Method SW 9014 – Total and dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Ankor-MC-21-BIOS	lead and zinc	No action	MB contained lead and zinc>MDL but<RL; Sample results were >RL.
Ankor-MC-21-BIOS	Zinc	"J" for (+)	Solid MS/MSD %Rs were>QC limits.
Ankor-MC-21-BIOS	Hexavalent chromium	"UJ" for ND	Solid MS/MSD %Rs <QC limits.
Arena-VR-342-Well No.A005	Zinc	"U"	MB contain zinc>MDL but <RL; Sample result>MDL but <RL.
Ankor-MC-21-BIOS	Selenium	"U"	CCB contain selenium>MDL but <RL; Solid sample result>MDL but <RL.
Arena-VR-342-Well No.A005	Selenium	"U"	CCB contain selenium>MDL but <RL; Water sample result>MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
MB – Method Blank PB –Preparation Blank MDL– method detection limit
ICB – initial calibration blank CCB – continuing calibration blank
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate "R" – Rejected

WORK ORDER#14090795

SDG NO.	#14090795
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	November 24, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for lead and selenium)	X (CCB contained lead and selenium>MDL but <RL; Sample result selenium >MDL but <RL.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (Except for hexavalent chromium) Unrelated sample was used for mercury.	X %Rs (39.2% and 21.2%) for solid hexavalent chromium<QC limits.
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
17-September-2014	Chevron-VR-245(M-F)-VR 245 H-6	HS14090795-01	Sludge	X	X	X	X

(1) Method SW 6020 – Total - arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

**Unable to centrifuge enough water to perform dissolved analyses

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Chevron-VR-245(M-F)-VR 245 H-6	Hexavalent chromium	"UJ"	Solid MS/MSD %Rs (39.2% and 21.2%) <QC limit.
	Selenium	"U"	CCBs contained selenium>MDL but <RL; Sample result >MDL but <RL.
	Lead	No action	CCBs contained lead >MDL but <RL; Sample result >MDL and >RL.

NOTE:

U – nondetect	(+) – positive result	J – estimated	QC – quality control
< – less than	> – greater than	ND – nondetect	RL – Reporting Limit
%R – percent recovery	MS/MSD –Matrix Spike/Matrix Spike Duplicate		MB – Method Blank
ICB – initial calibration blank		CCB – continuing calibration blank	
MDL– method detection limit		"R" – Rejected	PB –Preparation Blank

WORK ORDER#14091237

SDG NO.	#14091237
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	December 29, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for lead, zinc, and silver.)	X (ICB, CCB and PB contained lead, zinc and silver)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (metals, cyanide and hexavalent chromium.)	X (%Rs of MS/MSD for mercury<QC Limits.)
8. Post Digestion Spike (%R 75-125%)	X.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
29-SEP-2014	Mar-WR-578-Key Largo	HS14091237-01	Sludge	X	X	X	X
30-SEP-2014	Murphy-MC-538-Medusa#6	HS14091237-02	Sludge	X	X	X	X

The lab was unable to centrifuge sufficient volume of water to perform dissolved analysis.

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196– Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Mar-WR-578-Key Largo and Murphy-MC-538-Medusa#6	Lead, zinc	No action	ICB, CCB and MB contained lead, zinc>MDL but <RL; Sample results >MDL and >RL.
Murphy-MC-538-Medusa#6	Silver	"U"	ICB, CCB contained silver>MDL but <RL; Sample result >MDL but <RL.
Mar-WR-578-Key Largo	Mercury	"J" for (+) results	%Rs MS/MSD <QC limits.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
ICB – initial calibration blank CCB – continuing calibration blank
MDL– method detection limit "R" – Rejected PB –Preparation Blank

WORK ORDER#14101167

SDG NO.	#14101167
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	December 31, 2014

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for mercury)	X (MB contained mercury>MDL but <RL; Sample results >MDL and >RL. No action was required.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used For DUP.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (for cyanide and hexavalent chromium); Unrelated samples were used for metals and mercury.	X (%Rs MS/MSD for cyanide <QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used for PDS for metals.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used for SD and Dup.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
24-Oct-2014	APC-GC-859 # Heidelberg	HS14101167-01	Sludge	X	X	X	X
25-Oct-2014	Ankor-MC-21-B11	HS14101167-02	Sludge	X	X	X	X
25-Oct-2014	Ankor-MC-21-B11-DUP	HS14101167-03	Sludge	X	X	X	X
26-Oct-2014	Shell-MC-687-DeepMensa#02	HS14101167-04	Sludge	X	X	X	X
03-Nov-2014	Arena-ST-152-Well No. P003	HS14101167-05	Sludge	X	X	X	X
03-Nov-2014	NOBLE-MC-479-Madison	HS14101167-06	Sludge	X	X	X	X
06-Nov-2014	BP-KC-147-Tiber3 Well #1	HS14101167-08	Sludge	X	X	X	X
06-Nov-2014	BP-KC-147-Tiber3 Well #1-DUP	HS14101167-09	Sludge	X	X	X	X

Unable to centrifuge enough water to perform dissolved analyses on samples APC-GC-859 # Heidelberg, NOBLE-MC-479-Madison, BP-KC-147-Tiber3 Well #1 and BP-KC-147-Tiber3 Well #1-DUP (HS14101167-01-06, 08, and 09).

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
APC-GC-859 # Heidelberg, Ankor-MC-21-B11, Ankor-MC-21-B11-DUP, Shell-MC-687-Deep Mensa#02, and Arena-ST-152-Well No. P003.	Selenium	"U"	CCB contained selenium>MDL but <RL; Sample results >MDL but <RL.
BP-KC-147-Tiber3 Well #1	Cyanide	"UJ"	%Rs MS/MSD <QC limits.

NOTE:

U – nondetect
(+) – positive result
J – estimated
QC – quality control
< – less than
> – greater than
ND – nondetect
RL – Reporting Limit
%R – percent recovery
MS – Matrix Spike
PB – Preparation Blank
ICB – initial calibration blank
UJ – Estimated nondetect
CCB – continuing calibration blank
MDL– method detection limit

WORK ORDER#14110374

SDG NO.	#14110374
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 2, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (except for selenium)	X (CCB contained selenium>MDL but <RL; Sample result >MDL and <RL.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used For DUP.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (Cyanide). Unrelated samples were used for metals, mercury, and cyanide.	X (MS/MSD %Rs of hexavalent chromium<QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used for PDS for metals.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used for SD and Dup.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
10-Nov-2014	Murphy-MC-697-URCA	HS14110374-01	Sludge	X	X	X	X
10-Nov-2014	Arena-VR-342-WellNo.A004	HS14110374-03	Sludge	X	X	X	X
20-Nov-2014	Fieldwood Energy SS 274 Well C22 ST2	HS14110374-04	Sludge	X	X	X	X

Unable to centrifuge enough water to perform dissolved analyses on all samples.

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Murphy-MC-697-URCA	Selenium	"U"	CCB contained selenium>MDL but <RL; Sample result >MDL but <RL.
Murphy-MC-697-URCA	Hexavalent chromium	"J"	%Rs MS/MSD <QC limits.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS – Matrix Spike PB – Preparation Blank
ICB – initial calibration blank UJ – Estimated nondetect
CCB – continuing calibration blank MDL– method detection limit

WORK ORDER#14110868

SDG NO.	#14110868
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 6, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for zinc and selenium.)	X (CCB and PB contained Zinc and selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	Unrelated sample was used for metals, cyanide and mercury.	X (%Rs MS/MSD for solid hexavalent chromium were outside the QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
20-November-2014	BHPBP(GDM),Inc.-GC-610-SIHO3	HS14110868-01	Sludge	X	X	X	X
20-November-2014	BHPBP(GDM),Inc.-GC-610-SIHO3 Water	HS14110868-02	Sludge	Hold	Hold	Hold	Hold
29-November-2014	Chevron-VR-245(H-F)-VR245 H-5	HS14110868-03	Sludge	X	X	X	X
29-November-2014	Chevron-VR-245(H-F)-VR245 H-5 - Water	HS14110868-04	Sludge	X	X	X	X
04-December-2014	Shell-VK-913-DCSG-08 784	HS14110868-05	Sludge	X	X	X	X
04-December-2014	Shell-VK-913-DCSG-08 784 Water	HS14110868-06	Sludge	X	X	X	X

(1) Method SW 6020 – Total - arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

**Unable to centrifuge enough water to perform dissolved analyses for BHPBP(GDM),Inc.-GC-610-SIHO3 (HS14110868-01) and Shell-VK-913-DCSG-08 784(HS14110868-06).

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
BHPBP(GDM),Inc.-GC-610-SIHO3	Hexavalent chromium	No action for ND.	Solid MS/MSD %Rs >QC limits.
Chevron-VR-245(H-F)-VR245 H-5	Hexavalent chromium	"UJ" for ND.	Solid MS/MSD %Rs<QC limits.
Shell-VK-913-DCSG-08 784	Hexavalent chromium	"J" for (+).	Solid MS/MSD %Rs<QC limits.
Chevron-VR-245(H-F)-VR245 H-5	Zinc	No action.	CCBs contained zinc >MDL but <RL; Sample result >MDL and >RL.
Chevron-VR-245(H-F)-VR245 H-5 - Water	Cyanide	"UJ" for ND.	Water MS/MSD %Rs<QC limits.
Shell-VK-913-DCSG-08 784	Selenium	"U"	CCBs contained selenium>MDL but <RL; Sample result >MDL but <RL.
BHPBP(GDM),Inc.-GC-610-SIHO3	Lead	No action.	CCB contained lead >MDL but <RL; Sample result >MDL and >RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
ICB – initial calibration blank CCB – continuing calibration blank
MDL– method detection limit "R" – Rejected PB –Preparation Blank

WORK ORDER#14120316

SDG NO.	#14120316
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 9, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	X (Two coolers temperatures were 14.7°C and 16.3°C.)
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for zinc)	X (CCB contained zinc>MDL but <RL; Sample results >MDL, but >RL. No action was required.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (Except for solid hexavalent chromium and cyanide.) Unrelated samples were used for metals, mercury, cyanide and hexavalent chromium.	X (%Rs MS/MSD for solid hexavalent chromium and cyanide <QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated samples were used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470/ 7471 (2)	7196 (3)	9014 (4)
03-Dec-2014	Freeport-MC-85-KingM63#1	HS14120316-01	Sludge	X	X	X	X
03-Dec-2014	Freeport-MC-85-KingM63#1 - Water	HS14120316-02*	Sludge	X	X	X	X
03-Dec-2014	Pbras-WR-469-CH004	HS14120316-03	Sludge	X	X	X	X
03-Dec-2014	Pbras-WR-469-CH004 - Water	HS14120316-04	Sludge	X	X	X	X
04-Dec-2014	ExMob-SM-196-Well#2 P & A	HS14120316-05	Sludge	X	X	X	X
04-Dec-2014	ExMob-SM-196-Well#2 P & A - Water	HS14120316-06*	Sludge	Hold	Hold	Hold	Hold
05-Dec-2014	Chevron-VR-245(H-F)-VR 245 H-6	HS14120316-07	Sludge	X	X	X	X
05-Dec-2014	Chevron-VR-245(H-F)-VR 245 H-6 - Water	HS14120316-08*	Sludge	X	X	X	X
11-Dec-2014	APC-GC-903#6-Heidelberg	HS14120316-09	Sludge	X	X	X	X
11-Dec-2014	APC-GC-903#6-Heidelberg - Water	HS14120316-10*	Sludge	X	X	X	X

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470/7471 – Total and dissolved mercury
(3) Method SW 7196 – Total and dissolved hexavalent chromium
(4) Method SW 9014 – Total and dissolved cyanide

** Unable to centrifuge enough water to perform dissolved analysis for samples:
Freeport-MC-85-KingM63#1 (HS14120316-02) ExMob-SM-196-Well#2 P & A (HS14120316-06) and Chevron-VR-245(H-F)-VR 245 H-6 (HS14120316-08).
Sample APC-GC-903#6-Heidelberg (HS14120316-10) was not filterable, laboratory could not filter enough sample to run analysis.

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Freeport-MC-85-KingM63#1	Hexavalent chromium	"R"	Solid %Rs MS/MSD (13.4% and 3.57%) <QC limits.
Chevron-VR-245(H-F)-VR 245 H-6	Hexavalent chromium	"UJ"	Solid %Rs MS/MSD (41.2% and 0) <QC limits.
Pbras-WR-469-CH004	Cyanide	"UJ"	Solid %Rs MS/MSD (32.5% and 39.5%) <QC limits
All affected samples	Mercury	No action.	MB contained mercury>MDL but <RL; Sample results >RL.

NOTE:

U – nondetect	(+) – positive result	J – estimated	QC – quality control
< – less than	> – greater than	ND – nondetect	RL – Reporting Limit
%R – percent recovery	MS/MSD –Matrix Spike/Matrix Spike Duplicate		MB – Method Blank
ICB – initial calibration blank		CCB – continuing calibration blank	
MDL– method detection limit		"R" – Rejected	PB –Preparation Blank

WORK ORDER#14120680

SDG NO.	#14120680
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	January 9, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for lead and selenium)	X (PB and CCB contained lead and selenium>MDL but <RL; Sample result lead>RL,selenium >MDL but <RL.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (for hexavalent chromium). Unrelated samples were used for solid metals, solid and dissolved mercury and cyanide.	X (%Rs MS/MSD for dissolved metals<QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated samples were used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470/ 7471 (2)	7196 (3)	9014 (4)
13-Dec-2014	Freeport-GC-643-Holstein Deep Western	HS14120680-01	Sludge	X	X	X	X
13-Dec-2014	Freeport-GC-643-Holstein Deep Western Water	HS14120680-02	Sludge	X	X	X	X

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470/7471 – Total and dissolved mercury
(3) Method SW 7196 – Total and dissolved hexavalent chromium
(4) Method SW 9014 – Total and dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Freeport-GC-643-Holstein Deep Western Water	Copper	"R"	%Rs MS/MSD<30%
	Nickel	"UJ"	%Rs MS/MSD<QC limits
	Selenium	"UJ"	%Rs MS/MSD<QC limits
	Zinc	"R"	%Rs MS/MSD (-64.9% / -64.9%)
Freeport-GC-643-Holstein Deep Western Water	Selenium	"U"	CCBs contained selenium>MDL but <RL; Sample result >MDL but <RL.
Freeport-GC-643-Holstein Deep Western	Lead	No action	PB contained lead >MDL but <RL; Sample result >MDL and >RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
ICB – initial calibration blank CCB – continuing calibration blank
MDL– method detection limit "R" – Rejected PB –Preparation Blank

WORK ORDER#15010052

SDG NO.	#15010052
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	March 4, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated samples were used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (Cyanide) Unrelated samples were used for metals, mercury, cyanide and hexavalent chromium.	X (%Rs for solid hexavalent chromium<QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated samples were used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated samples were used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
03-Jan-2015	Chevron-WR634-WR634-Jack St.Malo PN003	HS15010052-01	Sludge	X	X	X	X
03-Jan-2015	Chevron-WR634-WR634-Jack St.Malo PN003 – Water *	HS15010052-02	Sludge	NA	NA	NA	NA
05-Jan-2015	TANA-VR-284-OCS-G-33604#2	HS15010052-03	Sludge	X	X	X	X
05-Jan-2015	TANA-VR-284-OCS-G-33604#2 – water *	HS15010052-04	Sludge	NA	NA	NA	NA
09-Jan-2015	WT-EW-910-ST320#A5	HS15010052-05	Sludge	X	X	X	X
09-Jan-2015	WT-EW-910-ST320#A5 - Water	HS15010052-06	Sludge	X	X	X	X

(1) Method SW 6020 – Total - arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

NA – Not analyzed
* The laboratory could not centrifuge sufficient volume to run the dissolved analysis.

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
TANA-VR-284-OCS-G-33604#2	Hexavalent chromium	"R" for (+)	Solid MS/MSD %Rs (-19.8 and -19.7) <30%.
WT-EW-910-ST320#A5	Hexavalent chromium	"J" for (+)	Solid MS/MSD %Rs (43.6 and 50.8) <QC limits.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
CCB – continuing calibration blank "UJ" – Estimated nondetect
MDL– method detection limit

WORK ORDER#15010385

SDG NO.	#15010385
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	February 10, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium)	X (CCB contained selenium>MDL but <RL; Sample result selenium >MDL but <RL.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (Cyanide) Unrelated sample was used for metals and mercury.	X (%Rs for solid hexavalent chromium<QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
12-Jan-2015	Fieldwood Energy-GC-64-GC 64#A23	HS15010385-01	Sludge	X	X	X	X
12-Jan-2015	Fieldwood Energy-GC-64-GC 64#A23 water**	HS15010385-02	Sludge	NA	NA	NA	NA
15-Jan-2015	Fieldswood Energy-SM-48-#E-7	HS15010385-03	Sludge	X	X	X	X
15-Jan-2015	Fieldswood Energy-SM-48-#E-7 Water **	HS15010385-04	Sludge	NA	NA	NA	NA

(1) Method SW 6020 – Total - arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

NA – Not analyzed
** No water layer could be centrifuged from the following sakmple: Fieldwood Energy-GC-64-GC 64#A23 Water (HS15010385-02), Fieldswood Energy-SM-48-#E-7 (HS15010385-04).

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Fieldwood Energy-GC-64-GC 64#A23	Hexavalent chromium	"UR" for <30%	Solid MS/MSD %Rs (27.6% and 20.4%) <QC limits.
Fieldswood Energy-SM-48-#E-7	Hexavalent chromium	"UJ" for <70%	Solid MS/MSD %Rs (65.2% and 60.8%) <QC limit.
Fieldwood Energy-GC-64-GC 64#A23	Selenium	"U"	CCBs contained selenium>MDL but <RL; Sample result >MDL but <RL.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
CCB – continuing calibration blank "UJ" – Estimated nondetect
MDL– method detection limit "R" – Rejected "UR" – Rejected nondetect

WORK ORDER#15010860

SDG NO.	#15010860
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	February 19, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (Cyanide) Unrelated sample was used for metals and mercury.	X (%Rs for solid hexavalent chromium<QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
26-Jan-2015	Shell-MC-809-P8	HS15010860-01	Sludge	X	X	X	X
26-Jan-2015	Shell-MC-809-P8	HS15010860-02	Sludge	NA	NA	NA	NA

(1) Method SW 6020 – Total - arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

NA – Not analyzed
• The laboratory could not centrifuge sufficient volume to run the dissolved analysis for Shell-MC-809-P8 (HS15010860-02)

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Shell-MC-809-P8	Hexavalent chromium	"UJ" for ND	Solid MS/MSD %Rs (58.8% and 51.2%) <QC limits.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
CCB – continuing calibration blank "UJ" – Estimated nondetect
MDL– method detection limit

WORK ORDER#15020593

SDG NO.	#15020593
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	March 9, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for lead and selenium)	X (CCB contained lead and selenium.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (Except for solid hexavalent chromium)	X (Solid Arsenic, copper, lead and zinc concentrations were >4X spike amount, no action was required; Solid hexavalent chromium %Rs<QC limits.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	X (Except for lead and zinc in water sample)	X (Water sample %D of SD>10 for lead and zinc.)
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
08-Feb-2015	Cobalt-GB-959-N/Platt#2	HS15020593-01	Sludge	X	X	X	X
09-Feb-2015	Cobalt-GB-959-N/Platt#2 water	HS15020593-02	Sludge	X	X	X	X

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total and dissolved mercury
(3) Method SW 7196 – Total and dissolved hexavalent chromium
(4) Method SW 9014 – Total and dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Cobalt-GB-959-N/Platt#2 water	Lead and zinc	"J"	%D of SD >10
Cobalt-GB-959-N/Platt#2 water	Lead and selenium	No action	CCB contained lead and selenium>MDL but <RL; Sample results were either >RL or ND.
Cobalt-GB-959-N/Platt#2	Lead	No action	CCB contained lead >MDL but <RL; Sample result was >RL.
Cobalt-GB-959-N/Platt#2	Hexavalent chromium	"J" for (+)	Solid MS/MSD %Rs (40.2 and 38.2) <QC limits.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
CCB – continuing calibration blank "UJ" – Estimated nondetect
MDL– method detection limit %D – percent difference SD – Serial Dilution

WORK ORDER#15020954

SDG NO.	#15020954
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	March 24, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X	
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (Except for solid hexavalent chromium)	X Solid hexavalent chromium %Rs <30%.)
8. Post Digestion Spike (%R 75-125%)	X	
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
24-Feb-2015	TANA-VR-284-OC3-G-3604 #3	HS15020954-01	Sludge	X	X	X	X
24-Feb-2015	TANA-VR-284-OC3-G-3604 #3 Water *	HS15020954-02	Water	NA	NA	NA	NA

NA – Not analyzed

• Insufficient volume could be extracted to perform the dissolved analysis for TANA-VR-284-OC3-G-3604 #3 water (HS15020954-02)

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
TANA-VR-284-OC3-G-3604 #3	Hexavalent chromium	"UR"	Solid MS/MSD %Rs (21.5 and 21.5) <30%.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%Rs – percent recoveries MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
CCB – continuing calibration blank "UR" – Rejected nondetect value
MDL– method detection limit %D – percent difference SD – Serial Dilution

WORK ORDER#15030361

SDG NO.	#15030361
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	April 8, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium)	X (CCB contained selenium and MB contained zinc.)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	X	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (except for arsenic, copper and hexavalent chromium)	X (%Rs for arsenic, copper and hexavalent chromium< QC limits.)
8. Post Digestion Spike (%R 75-125%)	X (except for arsenic and copper)	X (%Rs for arsenic and copper <QC limits)
9. ICP Serial Dilution (%D<10%) and DUP (%R<25)	X	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7470 (2)	7196 (3)	9014 (4)
03-Mar-2015	Noble-MC-948-Gunflint	HS15030361-01	Sludge	X	X	X	X
12-Mar-2015	APC-GC-859#4-Heidelberg	HS15030361-03	Sludge	X	X	X	X
12-Mar-2015	APC-GC-859#4-Heidelberg Water	HS15030361-04	Water	X	X	X	X
18-Mar-2015	Arena-HI-A547-Well No.C002	HS15030361-05	Sludge	X	X	X	X
18-Mar-2015	Arena-HI-A547-Well No.C002 (Water)	HS15030361-06	Water	X	NA	X	NA

** Insufficient sample could be obtained to perform the dissolved analysis for samples Noble-MC-948-Gunflint (HS15030361-02).

Insufficient sample could be obtained to perform all the dissolved analysis for sample Arena-HI-A547-well NO.C002 (HS15030361-06). Only Hexavalent Chromium and ICP Metals were run at the request of the client.

(1) Method SW 6020 – Total and dissolved arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7470 – Total and dissolved mercury
(3) Method SW 7196 – Total and dissolved hexavalent chromium
(4) Method SW 9014 – Total and dissolved cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Noble-MC-948-Gunflint	Arsenic and copper	"J" for (+)	%Rs MS/MSD and PDS<QC limits.
Arena-HI-A547-Well No.C002	Arsenic	"J" for (+)	%Rs MS/MSD<QC limits, and %R PDS acceptable.
Arena-HI-A547-Well No.C002 and Arena-HI-A547-Well No.C002	Zinc	No action	MB contained zinc>MDL and <RL; Sample result>RL.
Noble-MC-948-Gunflint	Selenium	"U"	CCB contained selenium>MDL, and <RL; Sample result >MDL and <RL.
APC-GC-859#4-Heidelberg Water	Selenium	"U"	CCB contained selenium>MDL, and <RL; Sample result >MDL and <RL.
APC-GC-859#4-Heidelberg Water	Zinc	No action	PB contained zinc>MDL and <RL; Sample result was ND.
Arena-HI-A547-Well No.C002	Selenium	"U"	CCB contained selenium>MDL, and <RL; Sample result >MDL and <RL.
APC-GC-859#4-Heidelberg	Hexavalent chromium	"UJ" for ND	%Rs MS/MSD<QC limits
APC-GC-859#4-Heidelberg Water	Hexavalent chromium	"J" for (+)	%Rs MS/MSD<QC limits
Arena-HI-A547-Well No.C002	Hexavalent chromium	"J" for (+)	%Rs MS/MSD<30%

NOTE:
U – nondetect (+) – positive result J – estimated "J-" – estimated low
QC – quality control < – less than > – greater than ND – nondetect
RL – Reporting Limit %R – percent recovery MS – Matrix Spike MB – Method Blank
ICB – initial calibration blank CCB – continuing calibration blank
MDL– method detection limit

WORK ORDER#15030975

SDG NO.	#15030975
SITE	Gulf of Mexico
LABORATORY	ALS
DATA VALIDATION (Level IV CLP-Like)	Cheryle Lu
COMPLETION DATE	April 23, 2015

REVIEW CRITERIA	**Meet Criteria**	
	Yes	**No** (1)
1. Chain of Custody (C-O-C), preservation, holding time, and sample preparation.	X	
2. Calibration Verification Data %R (ICV, CCV, 90-110%)	X	
3. Blanks (PB, ICB/CCB)	X (Except for selenium, copper and zinc.)	X (CCB contained selenium, and PB contained copper and zinc)
4. Interference Check Sample Data %R (80-120%)	X	
5. Laboratory Control Sample Data %R (80-120%)	X	
6. Duplicate Sample Analysis	Unrelated sample was used.	
7. Spike Sample Analysis %R (ICP-MS and hexavalent chromium 75-125%, Hg and Cyanide 80-120%).	X (for Cyanide) Unrelated samples were used for metals, mercury, cyanide and hexavalent chromium.	X (hexavalent chromium %Rs <QC limits.)
8. Post Digestion Spike (%R 75-125%)	Unrelated sample was used.	
9. ICP Serial Dilution (%D<10%)	Unrelated sample was used.	
10. ICP-MS Tune Analysis %RSD<5%	X	
11. ICP-MS Internal Standards %R (70-125%)	X	
12. **Overall Assessment**	**X**	

(1) See Table 2 for qualified data

TABLE 1
CROSS-REFERENCE FOR SAMPLE IDENTIFICATION

Sampling Date	Field ID	Lab ID	Matrix	6020 (1)	7471 (2)	7196 (3)	9014 (4)
23-Mar-2015	Shell-WR-508-OCS-G17001	HS15030975-01	Sludge	X	X	X	X
27-Mar-2015	Shell_GB-602-Macaroni	HS15030975-03	Sludge	X	X	X	X

**Insufficient sample could be centrifuged to perform the dissolved analysis for sample: Shell-WR-508 OCS G17001 (HS15030975-02) and Shell-GB-602-Macaroni Water (HS15030975-04).

(1) Method SW 6020 – Total arsenic, cadmium, copper, lead, nickel, selenium, silver and zinc.
(2) Method SW 7471 – Total mercury
(3) Method SW 7196 – Total hexavalent chromium
(4) Method SW 9014 – Total cyanide

TABLE 2
QUALIFIED ANALYTICAL DATA

Field Identification	Analyte	Qualification	Reason for Qualification
Shell-WR-508-OCS-G17001 And Shell_GB-602-Macaroni	Selenium	No action	CCB contained selenium >MDL, but <RL; Sample result was ND or >RL.
Shell-WR-508-OCS-G17001	Copper and Zinc	No action	PB contained copper and zinc >MDL but <RL; Sample results>RL.
Shell_GB-602-Macaroni	Hexavalent chromium	"J" for (+)	Solid MS/MSD %Rs (46.1/48.9) <QC limits.

NOTE:
U – nondetect (+) – positive result J – estimated QC – quality control
< – less than > – greater than ND – nondetect RL – Reporting Limit
%R – percent recovery MS/MSD –Matrix Spike/Matrix Spike Duplicate MB – Method Blank
CCB – continuing calibration blank "UJ" – Estimated nondetect
MDL– method detection limit %D – percent difference SD – Serial Dilution